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2019 ANNUAL VAPOR INTRUSION PROGRESS REPORT MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD, CALIFORNIA

by
Haley & Aldrich, Inc.
San Jose, California

File No. 127775-007
April 2020

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April 15, 2020

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Subject: 2019 Annual Vapor Intrusion Progress Report
Middlefield-Ellis-Whisman Area and Moffett Field
Mountain View, California

Dear Ms. Lee:

Please find attached the 2019 Annual Vapor Intrusion Progress Report for the Regional buildings located within the Middlefield-Ellis-Whisman Superfund Area and parts of Moffett Field in Mountain View, California. Haley & Aldrich, Inc., prepared this Annual Progress Report to document the work activities performed between 1 January and 31 December 2019 pursuant to the U.S. Environmental Protection Agency's 16 September 2011 Statement of Work, Section 2.6.2.

Please call the undersigned if you have questions regarding this progress report.

Very truly yours,

Virgilio Cocianni
Remediation Manager

c: MEW Distribution List

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SIGNATURE PAGE FOR

2019 ANNUAL VAPOR INTRUSION PROGRESS REPORT MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD, CALIFORNIA

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1,1-DCA	1,1-dichloroethane
Annual Progress Report	Annual Vapor Intrusion Progress Report
BAAQMD	Bay Area Air Quality Management District
COCs	chemicals of concern
EPA	United States Environmental Protection Agency
Geosyntec	Geosyntec Consultants
Haley & Aldrich	Haley & Aldrich, Inc.
HVAC	heating, ventilation, and air conditioning
MEW	Middlefield-Ellis-Whisman
NASA	National Aeronautics and Space Administration
OM&M	operations, maintenance, and monitoring
OM&M Plan	Building-specific Long-term Vapor Intrusion Operations, Maintenance, and Monitoring (OM&M) Plan
PCE	tetrachloroethene
ROD Amendment	Record of Decision Amendment for the Vapor Intrusion Pathway
RGRP	Regional Groundwater Remediation Program
RPD	relative percent difference
SOW	United States Environmental Protection Agency's Vapor Intrusion Statement of Work
SSD	sub-slab depressurization
SSV	sub-slab ventilation
TCE	trichloroethene
Tiering Work Plan	"Revised Site-wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering, Middlefield-Ellis-Whisman Superfund Area, Mountain View, California"
VI	vapor intrusion
VI Study Area	Middlefield-Ellis-Whisman (MEW) Superfund Area and parts of Moffett Field in Mountain View, California
Warmington	Warmington Residential
$\mu g/m^3$	micrograms per cubic meter

1. Introduction

Haley & Aldrich, Inc., (Haley & Aldrich) prepared this Annual Vapor Intrusion Progress Report (Annual Progress Report) for the Middlefield-Ellis-Whisman (MEW) Regional Groundwater Remediation Program (RGRP) Companies (hereinafter "MEW Companies") to document vapor intrusion (VI)-related work activities performed in 2019 as part of the Regional Program for MEW Superfund Area and parts of Moffett Field (collectively referred to as the VI Study Area; Figure 1) in Mountain View, California. The VI Study Area is the area where trichloroethene (TCE) concentrations in shallow groundwater are greater than 5 micrograms per liter. This Annual Progress Report was prepared pursuant to the U.S. Environmental Protection Agency's (EPA) 16 September 2011 Statement of Work (SOW) Section 2.6.2 (EPA, 2011). Each responsible party provides annual progress reports separately for its respective VI work.

The "Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California," ([ROD Amendment]; EPA, 2010) identifies seven chemicals of concern (COCs) for the VI Study Area: tetrachloroethene (PCE), TCE, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,1-dichloroethane (1,1-DCA), and vinyl chloride.

1.1 REQUIREMENTS OF ANNUAL PROGRESS REPORT

The following table lists the requirements of the Annual Progress Report as described in the SOW and identifies where in this report these requirements are addressed.

ITEM	LOCATION IN REPORT
Description of the VI work and activities taken to comply with the SOW during the reporting period (2019 for this Annual Progress Report), including a general description of all activities conducted during the reporting period.	Section 2 and Tables 1 and 2
Work activities, including but not limited to: fieldwork, sampling, data collection, reporting, community involvement and meetings, laboratory results, interim VI measures, and remedial design and remedial action activities.	Section 2, Tables 1 and 2, Appendices A and B
Summary of all sampling and monitoring data results by building or property address, including sampling location maps and figures, and data summary tables.	Section 2, Tables 3 through 10, Figures 4 through 6
Annual reassessment of the extent of the VI Study Area using the most recent shallow A Zone groundwater concentration data and other lines of evidence, as appropriate. Updated shallow A aquifer zone TCE iso-concentration maps should be provided in the Annual Progress Report.	Section 3

ITEM	LOCATION IN REPORT
Interpretation or explanation of the data collected during that period, including summary table updates of the response action tiering status of all buildings/properties.	Section 2[1]
Description of VI work planned for the next reporting period, with updated schedules that show overall VI work completed, VI work planned for the next reporting period, and the overall project schedule for VI work task completion.	Section 5
Description of all issues/problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated delays.	Section 4
Recommendations, follow-up actions, and proposed work schedules to address problems encountered.	Section 5

Information on the background of the VI Study Area was provided in the "Final Supplemental Remedial Investigation Report for Vapor Intrusion Pathway" (Haley & Aldrich, 2009) and is included herein by reference.

1.2 SUMMARY OF VI WORK ACTIVITIES

VI work activities were conducted in accordance with the ROD Amendment and the SOW during the 2019 reporting period, and included indoor air sampling and operations, maintenance, and monitoring (OM&M) for VI mitigation systems that are in operation, and tiering assessments.

As shown in Tables 1 and 2 and Figures 2 and 3 which summarize the status of air sampling conducted in the Regional buildings since 2010, once EPA finalized the ROD Amendment, the MEW Companies continue to proactively address VI pathways as needed. The last five-year review completed by the EPA concluded that the VI remedy continues to be protective of human health and the environment (EPA, 2019c). The VI remedies implemented throughout the VI Study Area have been and continue to be effective in meeting the requirements of the ROD Amendment.

[1] A table showing preliminary building tiers is included in "Revised Site-wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering" ([Tiering Work Plan]; Haley & Aldrich, 2013a).

2. Vapor Intrusion Work Activities

VI work activities conducted in 2019 included reporting and indoor air sampling as discussed below.

2.1 PROGRESS REPORTS

In accordance with the SOW, Sections 2.6.1, "Monthly Vapor Intrusion Field Activity and Progress Reports" were submitted to EPA to document new VI work activities performed during each month (Haley & Aldrich, 2019a; Haley & Aldrich, 2019b; Haley & Aldrich, 2019c, Haley & Aldrich, 2019g; Haley & Aldrich, 2019h; Haley & Aldrich, 2019j; Haley & Aldrich, 2019l). Beginning in September 2019, updated Monthly Vapor Intrusion Field Activity and Progress Reports were submitted only if a vapor intrusion assessment was completed and report submitted (Geosyntec Consultants [Geosyntec], 2019d). If no work was completed, an email stating that no new response action implementation activities were conducted that month and to refer to the last month activities took place (Haley & Aldrich, 2019e; Haley & Aldrich, 2019n; Haley & Aldrich, 2019q; Haley & Aldrich, 2019s; Haley & Aldrich, 2020).

In accordance with the SOW, Section 2.6.2, the "2018 Annual Vapor Intrusion Progress Report, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, Mountain View, California," was submitted to EPA on 12 April 2019 (Haley & Aldrich, 2019d) to document VI work activities performed during 2018.

2.2 SUMMARY OF BUILDING-SPECIFIC VI WORK ACTIVITIES

In 2019, indoor air samples were collected as part of the Regional Program in one commercial building and five residential properties located within the VI Study Area. EPA was notified prior to the field work. Other work included OM&M activities associated with long-term VI mitigation measures. The following summarizes the building-specific VI work activities, findings, and mitigation measures, if any. Appendix B contains laboratory analytical reports of air samples collected during this reporting period.

2.2.1 277 Fairchild Drive

Warmington Residential (Warmington) purchased the property at 277 Fairchild Drive in 2015, demolished the existing buildings in 2016, and is redeveloping it into four single-family residences and four multi-family buildings. EPA requested that a VI control system be installed beneath the buildings based on the TCE concentrations in groundwater and soil gas beneath and in the vicinity of the Property (EPA, 2015).

Warmington started construction of the system in November 2018 in accordance with the 23 May 2018 EPA approved design (Haley & Aldrich, 2017a; EPA, 2018). The following sections summarize the status of construction and operation of the SSD system for each building. Air sampling results are included in Table 3, SSD system performance monitoring data are included in Table 4, and the results of the effluent air samples are included in Table 5.

2.2.1.1 Lots 1 and 2

The construction activities at Lot 1 are complete, and Warmington used Lot 1 as a leasing office in 2019. The SSD system (equipment enclosure E-100) at Lot 1 began operating on 28 August 2019. Warmington conducted indoor air sampling in Lot 1 on 3 September 2019, and all COC concentrations were below

their respective ROD residential indoor air cleanup levels. SSD system inspections at Lot 1 included influent and effluent sampling on 4 September 2019, 18 October 2019, and 20 November 2019. No operational issues were identified during the inspections. As shown in Table 4, some measurements of the pressure differential beneath Lot 1 during 2019 were slightly below the design criterion of -0.02 inch of water column but have since increased above -0.02 inch of water column and the system is operating as designed. The SSD system emissions comply with applicable Bay Area Air Quality Management District (BAAQMD) regulations (Table 5).

The sub-slab features of the SSD system have been installed at Lot 2. Construction activities are ongoing at Lot 2 for utility trench dams and above-slab features of the VI mitigation system.

2.2.1.2 Lots 3 and 4

The vapor barrier and SSD system beneath Lots 3 and 4, as well as the associated treatment compound were installed in 2019. Construction activities are ongoing at Lots 3 and 4 for other components of the VI mitigation system (e.g., utility trench dams and above-slab features); therefore, startup activities for the Lots 3 and 4 SSD system did not initiate in 2019.

2.2.1.3 Building C

The SSD system (E-300) associated with Building C began operating on 8 August 2019. Pre-occupancy indoor air sampling was conducted in accordance with the 8 August 2019 EPA approved indoor air sampling plan (Haley & Aldrich, 2019i; EPA, 2019b) on 15 and 16 August 2019, approximately one week following startup of the SSD system. Table 3 and Figure 4 present the air sampling locations and results. COC concentrations were below their respective ROD residential indoor air cleanup levels except for 1,1-DCA and PCE. As reported to EPA in data reporting emails dated 28 August 2019 (Haley & Aldrich, 2019k) and 3 October 2019 (Haley & Aldrich, 2019m), the exceedances were due to indoor air sources and not vapor intrusion. Although 2020 activities are not included in this report, Warmington subsequently identified and removed the indoor air source from the building.

SSD system inspections at Building C included influent and effluent sampling on 15 August 2019, 18 October 2019, and 20 November 2019. No operational issues were identified during the inspections. As shown in Table 4, the SSD system achieves adequate pressure differential throughout the footprint of Building C. The SSD system emissions comply with applicable BAAQMD regulations (Table 5).

2.2.1.4 Building D

The SSD system beneath Building D began operating on 15 October 2019.

Pre-occupancy indoor air sampling was conducted in accordance with the 21 November 2019 EPA approved indoor air sampling plan (Haley & Aldrich, 2019o; EPA, 2019d) on 27 and 28 October 2019, approximately two weeks following the startup. Table 3 and Figure 5 present the air sampling results and locations, respectively. As reported to EPA (Haley & Aldrich, 2019p), COC concentrations were below their respective ROD residential indoor air cleanup levels except for PCE. Warmington attempted to identify the source of PCE and ventilate the building after which indoor air samples were collected; however, as reported to EPA in an email dated 16 December 2019 (Haley & Aldrich, 2019t), PCE was still detected at a concentration greater than its respective ROD residential indoor air cleanup level.

Although 2020 activities are not included in this report, Warmington subsequently identified and removed the indoor air source from the building.

SSD system inspections at Building D included influent and effluent sampling on 28 October 2019, 20 November 2019, and 31 December 2019. No operational issues were identified during the inspections. As shown in Table 4, the SSD system achieves adequate pressure differential throughout the footprint of Building D. The SSD system emissions comply with applicable BAAQMD regulations (Table 5).

2.2.1.5 Building E

The vapor barrier and SSD system beneath Building E and the SSD treatment system were installed in 2019. Construction activities are ongoing at Building E for other components of the VI mitigation system (e.g., utility trench dams and above-slab features). No SSD system startup or air sampling activities have been performed for Building E.

2.2.1.6 Building F

The vapor barrier and SSD system were under construction in 2019. The SSD treatment system associated with Building F was constructed in 2019. Construction activities are ongoing at Building F for other components of the VI mitigation system (e.g., utility trench dams and above-slab features). No SSD system startup or indoor air sampling activities have been performed for Building F.

2.2.2 331 Fairchild Drive

The building located at 331 Fairchild Drive was constructed in 2013 with a vapor barrier and passive sub-slab ventilation (SSV) system (Haley & Aldrich, 2014a). On 5 September 2019, an annual inspection of the SSV system was conducted in accordance with the building's OM&M Plan, (Haley & Aldrich, 2013b). As documented in the SSV inspection report (Appendix A), the system was operating as designed and no modifications were necessary.

2.2.3 340 East Middlefield Road

The building located at 340 East Middlefield Road was constructed in 2012 with a vapor barrier and a passive SSV system (Environmental, Health, Safety and Sustainability Consulting, 2013). On 8 February 2019, an annual inspection of the SSV system was conducted in accordance with the building's OM&M Plan, (Haley & Aldrich, 2014c). As documented in the SSV inspection report (Appendix A), the system was operating as designed and no modifications were necessary.

2.2.4 440 East Middlefield Road

An active SSD system was installed and started operating at 440 East Middlefield Road in 2015 (Haley & Aldrich, 2015b). The SSD system inspections conducted on 8 March 2019, 10 June 2019, 4 September 2019, and 2 December 2019 in accordance with the building's OM&M Plan (Haley & Aldrich, 2015a) indicated no operational issues. As shown in Table 6, the SSD system continues to achieve adequate pressure differential throughout the building's footprint. The SSD system emissions comply with applicable BAAQMD regulations (Table 7). Because the SSD system has operated without issue since

2015, a request to perform SSD system inspections semiannually, instead of quarterly, starting in 2020 was submitted to EPA on 25 November 2019 (Haley & Aldrich, 2019r).

Tenant improvements started in February 2019 in accordance with an EPA approved drawing detailing the planned trenching and repairs (McLarney Construction, Inc., 2019). The MEW Companies observed the tenant improvement activities that penetrated the SSD system components between 7 February 2019 and 23 April 2019.

2.2.5 455 National Avenue

After an SSD pilot test showed that sub-slab depressurization is not feasible under the building at 455 National Avenue, it was determined that modifying the building's HVAC system was an effective VI control measure (Haley & Aldrich, 2014b) and this VI control measure has been implemented. Because the building was vacated in December 2018, on 31 January 2019, the HVAC system was modified to only operate daily between 2:00 PM and 5:00 PM.

2.2.6 615 National Avenue

The active SSD system voluntarily installed as a preventative measure by the MEW Companies at the building located at 615 National Avenue started operating on 12 July 2018. The second round of post-occupancy indoor air sampling was conducted with the HVAC system on and off on 8 March and 24 March 2019, respectively, in accordance with the "Building-Specific Vapor Intrusion Response Action Implementation Report" (Haley & Aldrich, 2018). As reported to EPA on 15 May 2019 (Haley & Aldrich, 2019f) and presented on Table 8, all COC concentrations were below their respective ROD commercial indoor air cleanup levels.

SSD system inspections included influent and effluent sampling on 24 March 2019, 10 June 2019, 4 September 2019, and 2 December 2019 in accordance with the building's OM&M Plan (Haley & Aldrich, 2017b). No operational issues were identified during the inspections. No operational issues were identified during the inspections.

As shown in Table 9, the SSD system continues to achieve adequate pressure differential throughout the building's footprint. The SSD system emissions comply with applicable BAAQMD regulations (Table 10).

2.2.7 620 National Avenue

A SSD system was installed and started operating in October 2017 in accordance with the "Building-Specific Vapor Intrusion Remedial Action Implementation Report" (Geosyntec, 2018). Routine OM&M activities and associated reporting have been ongoing since system startup in October 2017 in accordance with the OM&M Plan (Geosyntec, 2015). As reported, no operational issues have been identified (Geosyntec, 2019a; Weiss, 2020).

2.2.8 Moffett Field

A soil vapor survey work plan was prepared to support the proposed construction of residential and commercial buildings on portions of National Aeronautics and Space Administration (NASA) Ames Research Center, Moffett Field, and submitted to the EPA on 13 November 2019 (Geosyntec, 2019e). The remainder of Section 2.2.8 describes activities performed in two existing commercial buildings on Moffett Field.

2.2.8.1 Building 20

In 2008, NASA installed two continuously operating exhaust fans in the basement of this building as a VI mitigation measure (Neptune and Company, Inc., 2009a and 2009b). On 13 February 2019, the MEW Companies were notified by NASA Facilities that the negative pressure created by the basement ventilation system may be inhibiting the operation of the boiler. At NASA Facilities' request, the basement ventilation system was shut off at approximately 3:00 PM to assess whether this concern was correct. On 15 February 2019, NASA Facilities' staff determined that the operation of the basement ventilation system did not inhibit the operation of the boiler; the system was turned on again at approximately 1:00 PM.

The annual basement ventilation system inspection conducted on 5 September 2019 indicated the system was operating as designed and no modifications were necessary (see Appendix A).

2.2.8.2 Building 556

On 4 November 2019, NASA notified the MEW Companies that a new tenant planned to move into Building 556. During the 15 November 2019 walkthrough with EPA to select indoor air sampling locations, and through subsequent communications with NASA and the future building tenant, it was determined that the HVAC system in the building was not fully operational.

2.2.9 Residences

2.2.9.1 Residence 4

On 8 February 2019, the annual inspection of the earthen cellar ventilation system was conducted. The inspection showed that the system was operating as designed and no modifications were necessary (Appendix A). The telemetry system was upgraded on 10 June 2019 to remotely notify the MEW Companies of any unscheduled changes system operation.

2.2.9.2 Residences 159A and 159B (Private Residence)

On 21 June 2016, the EPA informed the MEW Companies of the plans for a new two-unit residential development west of Whisman Road. A passive SSV system was installed under the two buildings in accordance with an EPA-approved design (Geosyntec, 2016b); construction was completed in 2018. On 4 and 5 February 2019 and 14 and 15 November 2019 post-occupancy indoor air sampling was conducted. Results were provided to EPA on 1 March 2019 and 5 December 2019 (Geosyntec, 2019b; Geosyntec, 2019f) and demonstrated no additional vapor control measures were required. The "2019 Annual Passive Sub-Slab Venting System Operation, Maintenance, and Monitoring Report" prepared for the buildings located on the property was submitted to EPA on 13 December 2019 (Geosyntec, 2019g).

2.2.9.3 Private Residence

Between 13 July 2016 and 15 July 2016, a soil vapor assessment was conducted at a new residential development west of Whisman Road. The results (Geosyntec, 2016a; Geosyntec, 2019c) indicated the property could be classified as Tier B according to the ROD Amendment tiering classification and no VI control measures were needed.

Pre-occupancy confirmation air sampling was completed on 29 and 30 May 2019. The results confirmed that there was no potential vapor intrusion risk and indoor air cleanup levels were being met without a vapor mitigation system. The results, which support a Tier B determination for the property, were submitted to the EPA on 24 June 2019 (Geosyntec, 2019c).

2.3 QUALITY ASSURANCE/QUALITY CONTROL ACTIVITIES

Quality assurance/quality control activities, which include data verification and data validation, complied with the requirements detailed in the Tiering Work Plan (Haley & Aldrich, 2013a). Data verification refers to a process for evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, or contractual requirements. Data validation refers to an analyte and sample-specific process that extends data evaluation beyond method, procedural, or contractual compliance (i.e., data verification) to determine the analytical quality of a specific data set. This section describes the quality assurance/quality control activities related to samples collected in 2019.

No deviations or discrepancies were identified for field techniques or sampling protocol. The laboratory followed media preparation procedures for the sampling canisters and sample analysis. A Stage I or Stage II evaluation was completed for each analytical report and a data usability summary report generated for each evaluation.

The minimum requirements for the data validation and verification were specified in the Tiering Work Plan (Haley & Aldrich, 2013a) and achieved in 2019. Additional validations and verifications were performed based on detected COC concentrations in the indoor air samples (i.e., Stage II evaluations are generally performed when COC concentrations are above the ROD indoor air cleanup levels; otherwise, Stage II evaluations are typically performed at random). As shown in the following table, the required validation was performed on the collected data.

	% of Data Validated	**% of Selected Data Validated Subjected to Stage I Evaluation**	**% of Selected Data Validated Subjected to Stage II Evaluation**	**% of Selected Data Validated Subjected to Stage III Evaluation**
Requirement per Tiering Work Plan	25%	80%	20%	0%
2019 Reporting Period	100% (71 of 71 samples)	100% (71 of 71 samples)	22% (16 of 71 samples)	0% (0 of 71 samples)

2.3.1 Field Quality Control Procedures

In 2019, 45 indoor and outdoor air samples, including four field duplicates (10% of primary indoor air samples), were collected from five buildings and 26 influent and effluent samples from SSD systems operating within the VI Study Area. Precision was evaluated by assessing the relative percent difference (RPD) between primary and field duplicate samples. The RPD was calculated when a given analyte was detected at a concentration above the laboratory reporting limit in both the primary sample and the field duplicate sample at a given location. No data were rejected during the data validation process.

2.4 COMMUNITY INVOLVEMENT AND MEETINGS

Community involvement and meetings continue to be conducted by the EPA as needed.

3. Vapor Intrusion Study Area

Figures 1, 2, and 3 depict the VI Study Area. The boundary of the VI Study Area is based on TCE concentration maps released periodically by EPA; the most recent maps are dated 29 May 2019 (EPA, 2019a). Updated TCE concentration contours for the A Zone were provided in the groundwater monitoring report "2019 Annual Progress Report" prepared by Geosyntec (Geosyntec, 2020).

4. Delays Encountered in 2019

Although the Revised Tiering Work Plan has not been approved by EPA to date, the MEW Companies elected to move forward with tiering activities for the buildings and properties located within the VI Study Area.

EPA has yet to provide concurrence with the Tier B determinations made for properties located at 310 North Whisman Road, Residence 156, and another Private Residence.

5. Anticipated Activities Planned for 2020

The following activities are currently planned for 2020:

- Updated Monthly Vapor Intrusion Field Activity and Progress Reports will be submitted to the EPA on the second Tuesday of each month when a vapor intrusion assessment has been completed and the report submitted.
- Building-specific work:
  - Begin implementing tiering-related activities for the buildings and properties located within the VI Study Area.
  - Tenant improvement activities, to be conducted by others, in the buildings located at 620 National Avenue, 265/275 North Whisman Road, and 440 East Middlefield Road.
  - Indoor and outdoor air samples will be collected at 265/275 North Whisman Road, 440 East Middlefield, and 620 National Avenue after tenant improvements have been completed and prior to occupancy. Indoor and outdoor air sampling results will be summarized in an e-mail message to the EPA and detailed in the 2020 Annual Vapor Intrusion Progress Report.
  - Ongoing building-specific OM&M activities will continue for the passive SSV systems operating at 340 East Middlefield Road and 331 Fairchild Drive.
  - Ongoing building-specific OM&M activities will continue for the SSD systems operating at 277 Fairchild Drive; 440 East Middlefield Road; 615 National Avenue; and 620 National Avenue.
  - The HVAC system operations will be inspected at 455 National Avenue if the building becomes occupied.
  - Identify the source(s) of PCE detected in Buildings C and D at 277 Fairchild Drive.
  - Continue construction oversight of the installation of the SSD system components (e.g., utility trench dams and above-slab features) for Buildings E and F and Lots 2, 3, and 4 at 277 Fairchild Drive. Startup of the SSD system associated with each of these buildings will be conducted and pre-occupancy indoor air samples collected once the construction has been completed.
  - An annual inspection will be conducted on the basement ventilation system operating at Building 20 and the crawlspace ventilation system operating at Residence 4.

References

1. Environmental, Health, Safety and Sustainability Consulting, 2013. "Initial Building Vapor Intrusion Response Action Implementation Report, Construction Installation Verification Report for Sub-Slab Passive Ventilation and Vapor Barrier System at 340 East Middlefield, Mountain View, CA," 26 June 2013.

2. Geosyntec Consultants, 2015. "Building-Specific Long-Term Vapor Intrusion Operations, Maintenance, and Monitoring Plan, 600 National Avenue, Mountain View, California," July.

3. Geosyntec Consultants, 2016a. "Email Follow-up of Soil Vapor Assessment," Private Residence, Mountain View, California, 29 July.

4. Geosyntec Consultants, 2016b. "Building-specific Vapor Intrusion Control System Design Report," Private Residence, Mountain View, California, 19 August.

5. Geosyntec Consultants, 2018. "Building-specific Vapor Intrusion Response Action Implementation Report," 21 March.

6. Geosyntec Consultants, 2019a. "Fourth Quarter 2018 Sub-slab Depressurization System Operation, Maintenance, and Monitoring Report, 620 National Avenue, Mountain View, California," 22 January.

7. Geosyntec Consultants, 2019b. Email entitled "542 N. Whisman Rd - First round of post-occupancy air sampling results," 1 March.

8. Geosyntec Consultants, 2019c. Email entitled "Tier B Status Determination – 534 North Whisman Road, Mountain View, CA," 24 June.

9. Geosyntec Consultants, 2019d. Email entitled "Proposed edits to MEW VI study area monthly reporting," 20 September.

10. Geosyntec Consultants, 2019e. Memorandum entitled "Revised Proposed Soil Vapor Survey, Mountain View Housing Ventures Development, Moffett Field, California", 13 November.

11. Geosyntec Consultants, 2019f. Email entitled "542 N. Whisman Rd - Second round of post-occupancy air sampling results," 5 December.

12. Geosyntec Consultants, 2019g. Email entitled "2019 Annual Passive Sub-Slab Venting System Operation, Maintenance, and Monitoring Report, 542 North Whisman Road, Mountain View, CA," 13 December.

13. Geosyntec Consultants, 2020. "2019 Annual Progress Report, Middlefield-Ellis-Whisman Regional Groundwater Remediation Program, Mountain View, California," 15 April.

14. Haley & Aldrich, Inc., 2009. "Final Supplemental Remedial Investigation for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman Study Area, Mountain View and Moffett Field, California," 29 June.

15. Haley & Aldrich, Inc., 2013a. "Revised Site-Wide Vapor Intrusion Sampling and Analysis Work Plan for Response Action Tiering, Middlefield-Ellis-Whisman Superfund Area, Mountain View, California," 22 March.

16. Haley & Aldrich, Inc., 2013b. "Building-specific Long-term Vapor Intrusion Operations, Maintenance and Monitoring (OM&M) Plan, 331/333 Fairchild Drive, Mountain View, California," 27 November.

17. Haley & Aldrich, Inc., 2014a. "Building-specific Vapor Intrusion Response Action Implementation Report, 331 Fairchild Drive, Mountain View, California," 31 January.

18. Haley & Aldrich, Inc., 2014b. "Update on Vapor Intrusion Activities Performed November 2013 and December 2013, 455/465 National Avenue, Mountain View, California," 4 February.

19. Haley & Aldrich, Inc., 2014c. "Building-specific Long-term Vapor Intrusion Operation, Maintenance, and Monitoring (OM&M) Plan, 340 East Middlefield Road, Mountain View, California," 9 April.

20. Haley & Aldrich, Inc., 2015a. "Building-specific Long-term Vapor Intrusion Operations, Maintenance, and Monitoring (OM&M) Plan, 440 East Middlefield Road, Mountain View, California" 21 July.

21. Haley & Aldrich, Inc., 2015b. "Building-specific Vapor Intrusion Response Action Implementation Report, 440 East Middlefield Road, Mountain View, California," 18 December.

22. Haley & Aldrich, Inc., 2017a. "Final Property-specific Vapor Intrusion Control System Remedial Design, 277 Fairchild Drive, Mountain View, California," 6 January.

23. Haley & Aldrich, Inc., 2017b. "Building-specific Long-term Vapor Intrusion Operations, Maintenance, and Monitoring Plan, 615 National Avenue, Mountain View, California" 4 December.

24. Haley & Aldrich, Inc., 2018. "Building-Specific Vapor Intrusion Response Action Implementation Report," 615 National Avenue, Mountain View, California, 23 October.

25. Haley & Aldrich, Inc., 2019a. "Monthly Vapor Intrusion Field Activity and Progress Report – January 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 12 February.

26. Haley & Aldrich, Inc., 2019b. "Monthly Vapor Intrusion Field Activity and Progress Report – February 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 11 March.

27. Haley & Aldrich, Inc., 2019c. "Monthly Vapor Intrusion Field Activity and Progress Report – March 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 5 April.

28. Haley & Aldrich, Inc., 2019d. "2018 Annual Vapor Intrusion Progress Report, Middlefield-Ellis-Whisman Area and Moffett Field, Mountain View, California," 12 April.

29. Haley & Aldrich, Inc., 2019e. "Transmittal of the Monthly Vapor Intrusion Field Activity and Progress Report - MEW Area and Moffett Field, California - April 2019," 7 May.

30. Haley & Aldrich, Inc., 2019f. Email entitled "615 National Avenue - Indoor Air Sampling Results Transmittal," 615 National Avenue, Mountain View, California, 15 May.

31. Haley & Aldrich, Inc., 2019g. "Monthly Vapor Intrusion Field Activity and Progress Report – May 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 11 June.

32. Haley & Aldrich, Inc., 2019h. "Monthly Vapor Intrusion Field Activity and Progress Report – June 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 9 July.

33. Haley & Aldrich, Inc., 2019i. "277 Fairchild Drive - Startup/IA sampling Notification for Lot 1 and Building C," 7 August.

34. Haley & Aldrich, Inc., 2019j. "Monthly Vapor Intrusion Field Activity and Progress Report – July 2018, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 13 August.

35. Haley & Aldrich, Inc., 2019k. Email entitled "277 Fairchild Drive - Indoor Air Sampling Results Transmittal," 277 Fairchild Drive, Mountain View, California," 28 August.

36. Haley & Aldrich, Inc., 2019l. "Monthly Vapor Intrusion Field Activity and Progress Report – August 2019, Middlefield-Ellis-Whisman (MEW) Area and Moffett Field, California," 5 September.

37. Haley & Aldrich, Inc., 2019m. Email entitled "277 Fairchild Drive - Building C - Indoor Air Sampling Results," 3 October.

38. Haley & Aldrich, Inc., 2019n. Email entitled "Transmittal of the Monthly Vapor Intrusion Field Activity and Progress Report - MEW Area and Moffett Field, California – August 2019," 8 October.

39. Haley & Aldrich, Inc., 2019o. Email entitled "Indoor Air Testing for Building D", 23 October.

40. Haley & Aldrich, Inc., 2019p. Email entitled "Indoor air testing for Building D," 4 November.

41. Haley & Aldrich, Inc., 2019q. Email entitled "Transmittal of the Monthly Vapor Intrusion Field Activity and Progress Report - MEW Area and Moffett Field, California - October 2019," 12 November.

42. Haley & Aldrich, Inc., 2019r. "Modification to Operations, Maintenance, and Monitoring Schedule, 440 East Middlefield Road, Mountain View, California," 25 November.

43. Haley & Aldrich, Inc., 2019s. Email entitled "Transmittal of the Monthly Vapor Intrusion Field Activity and Progress Report - MEW Area and Moffett Field, California - November 2019," 10 December.

44. Haley & Aldrich, Inc., 2019t. Email entitled "Indoor air testing for Building D," 16 December.

45. Haley & Aldrich, Inc., 2020. Email entitled "Transmittal of the Monthly Vapor Intrusion Field Activity and Progress Report - MEW Area and Moffett Field, California - December 2019," 14 January.

46. McLarney Construction, Inc., 2019. Email entitled “18-156 440 Middlefield - new saw cut/floor core for tenant improvement - EPA Clearance PC: 2018-4234,” 18 January.

47. Neptune and Company, Inc., 2009a. “Final Report for May 2008 Vapor Intrusion Sampling in Buildings 16, 20, 107, and 126 at the NASA Research Park (NRP),” 7 January.

48. Neptune and Company, Inc., 2009b. “Final Report for July 2008 Vapor Intrusion Sampling in Building (B)20,” 28 January.

49. United States Environmental Protection Agency, 2010. “Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California,” August.

50. United States Environmental Protection Agency, 2011. “Statement of Work for Remedial Design and Remedial Action to Address the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California,” 16 September.

51. United States Environmental Protection Agency, 2015. “EPA Request for Remedial Design of Active Sub-Slab Vapor Intrusion Control Systems, 277 Fairchild Drive Residential Project, Mountain View, California, Middlefield-Ellis-Whisman (MEW) Superfund Study Area,” 22 April.

52. United States Environmental Protection Agency, 2018. “EPA Approval – Final Property-Specific Vapor Intrusion Control System Remedial Design, 277 Fairchild Drive, Mountain View, California, Middlefield-Ellis-Whisman (MEW) Superfund Study Area,” 23 May.

53. United States Environmental Protection Agency, 2019a. “MEW Superfund Area and Vicinity, Mountain View and Moffett Field, California,” 29 May.

54. United States Environmental Protection Agency, 2019b. Email entitled “277 Fairchild Drive - Startup/IA sampling Notification for Lot 1 and Building C,” 8 August.

55. United States Environmental Protection Agency, 2019c. “Fourth Five-Year Review Report for Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, Santa Clara County, California,” 30 September.

56. United States Environmental Protection Agency, 2019d. Email entitled “277 Fairchild,” 21 November.

57. Weiss Associates, 2020. “2019 Annual Sub-Slab Depressurization System Operation, Maintenance, and Monitoring Report for 620 National Avenue, Mountain View, California,” 31 January.

TABLES

TABLE 1
STATUS OF AIR SAMPLING FOR BUILDINGS WITH NO VAPOR INTRUSION RESPONSE ACTION
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Building Address	Access Received	Building Walkthrough Performed	Work Plan Submitted	EPA's Approval of Work Plan	Work Plan Implemented (60 days after EPA approval of Work Plan)	Report Submitted (60 days after completion of sampling)	Comments & Notes
North Whisman Road							
265/275 N. Whisman Rd.	3/7/2011	4/20/2011	7/24/2011	2/17/2012	3/30/2012	5/29/2012	The building owner trenched through the concrete slab to relocate the restrooms. Haley & Aldrich conducted a site visit on 23 May 2017 to view the trenching. The sawcut and conduits were sealed on 18 October 2017. Haley & Aldrich understands that the design of the tenant improvements is in progress. A walkthrough and post-renovation indoor air sampling event will be performed prior to occupancy of the building.
276 N. Whisman Rd.	1/17/2011	2/23/2011, 1/27/2017	7/24/2011, 2/1/2017	2/17/2012	3/20/2012, 3/2/2017	5/18/2012	The building owner trenched through the concrete slab to perform emergency sewer repairs in January 2017. Haley & Aldrich conducted a site visit on 27 January 2017 to view the trenching and provided EPA with an email update on 1 February 2017. Haley & Aldrich collected confirmation indoor air samples on 2/3 March 2017, and all COC concentrations were below their respective ROD commercial indoor air cleanup levels.
301 N. Whisman Rd.	8/1/2011	8/16/2011	11/18/2019	2/17/2012	4/27/2012, 4/29/2012	6/26/2012	
310 N. Whisman Rd.	2/9/2011	4/20/2011	8/1/2011, 8/22/2017	2/17/2012, 8/25/2017	3/20/2012, 9/13/2017 - 9/17/2017	5/18/2012, 10/5/2017	On 1 August 2017, EPA informed the MEW Companies of a new commercial development. Geosyntec collected soil gas, sub-slab soil gas, indoor, and outdoor air samples in September 2017. Based on the assessment, the property is proposed to be classified as Tier B according to the ROD Amendment tiering classification. EPA concurred with the preliminary tier classification on 5 October 2017. Pre-occupancy indoor air sampling was performed on 5-6 November 2018, and the results confirmed that there is no potential vapor intrusion risk and indoor air cleanup levels are met without a vapor mitigation system. The results supporting the Tier B property status were submitted to EPA on 4 December 2018.
425 N. Whisman Rd. #100-800	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012	6/12/2012	Plumbers performing renovations in 2016 in Suite 800 accidentally punctured the sub-slab 35-mil vapor barrier, which was subsequently repaired under the supervision of EKI, the consultant for the property manager.
435 N. Whisman Rd. #100-400	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012	6/12/2012	
445 N. Whisman Rd. #100-400	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012	6/12/2012	
455 N. Whisman Rd. #100-400	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012, 4/16/2012	6/12/2012	
465 N. Whisman Rd. #100-600	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012	6/12/2012	The property owner informed Haley & Aldrich on 14 June 2018 that an unsealed existing saw cut through the concrete slab was exposed while carpet was being removed in Suite 200. Haley & Aldrich understands that EPA subsequently collected air samples inside the suite. The property owner retained a contractor recommended by EKI, the designer of the sub-slab pressurization system, to repair the sub-slab vapor barrier and seal the saw cut. The repairs have been completed but interior remodeling is ongoing. Haley & Aldrich will perform a walkthrough and collect post-repair indoor air samples upon completion of remodeling.

TABLE 1
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MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Building Address	Access Received	Building Walkthrough Performed	Work Plan Submitted	EPA's Approval of Work Plan	Work Plan Implemented (60 days after EPA approval of Work Plan)	Report Submitted (60 days after completion of sampling)	Comments & Notes
475 N. Whisman Rd. #100-400	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012	6/12/2012	
485 N. Whisman Rd. #100-400	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012	6/12/2012	
495 N. Whisman Rd. #100-500	3/11/2011	4/20/2011	8/1/2011	2/17/2012	4/13/2012, 4/15/2012, 4/16/2012	6/12/2012	
East Middlefield Road							
295 E. Middlefield Rd.	2/4/2011	2/23/2011	7/24/2011	2/17/2012	3/20/2012	5/18/2012	
325 E. Middlefield Rd.	3/5/2011	4/20/2011	8/1/2011	2/17/2012	3/30/2012	5/29/2012	Haley & Aldrich understands that the property may be sold and redeveloped.
335 E. Middlefield Rd.	8/1/2011, 9/26/2016	8/16/2011, 10/3/2016, 10/7/2016	8/30/2011, 10/5/2016, 2/22/2017	2/17/2012, 10/5/2016	4/27/2012, 4/29/2012, 10/10/2016, 10/12/2016, 3/3/2017, 3/5/2017	6/26/2012	The building was renovated in 2016 and 2017. The work included sealing cracks and conduits in the concrete slab. The occupied northern suite was sampled on 10 October 2016 (HVAC on) and 12 October 2016 (HVAC off), and the indoor air sampling results were provided to EPA on 20 October 2016. All COC concentrations were below their respective ROD commercial indoor air cleanup levels. Tenant improvements in the southern suite were completed in February 2017. Post-renovation indoor air sampling was conducted on 3 March 2017 (HVAC on) and 5 March 2017 (HVAC off). All COC concentrations were below their respective ROD commercial indoor air cleanup levels. The results of the March 2017 sampling were provided to EPA in an email dated 30 March 2017.
345 E. Middlefield Rd.	8/1/2011, 1/24/2017	8/16/2011, 2/15/2017	8/30/2011, 2/22/2017	2/17/2012	5/23/2012, 6/3/2012, 3/3/2017, 3/5/2017	7/23/2012	The building was renovated in 2016 and 2017, which included sealing cracks and conduits in the concrete slab. Post-renovation indoor air samples were collected on 3 March 2017 (HVAC on) and 5 March 2017 (HVAC off). All COC concentrations were below their respective ROD commercial indoor air cleanup levels. The results of the March 2017 sampling were provided to EPA in an email dated 30 March 2017.
448/450 E. Middlefield Rd.	1/28/2011	2/23/2011	8/1/2011	2/17/2012	3/16/2012, 3/18/2012	5/15/2012	
460 E. Middlefield Rd.	9/3/2013	9/9/2013	10/31/2013	11/25/2013	12/13/2013, 12/15/2013	2/13/2014	
490 E. Middlefield Rd.	8/30/2012	9/19/2012	10/18/2012	10/26/2012	11/9/2012, 11/11/2012	1/8/2013	
Ellis Street							
480/488 Ellis St.	9/4/2012	9/20/2012	10/18/2012	10/26/2012	11/9/2012, 11/11/2012, 1/11/2013, 1/13/2013, 3/8/2013, 3/10/2013, 4/7/2013, 4/4/2014, 4/6/2014	2/11/2013	
500 Ellis St.	9/20/2012	9/20/2012	10/18/2012	10/26/2012	11/16/2012, 11/18/2012	1/15/2013	
515 Ellis St.	9/5/2012	9/19/2012	10/18/2012	10/26/2012	11/15/2012, 11/18/2012	1/14/2013	The building was renovated in 2014. The work included sealing cracks and conduits in concrete slab. Post-renovation indoor air sampling was performed on 10 November 2014, and all COC concentrations were below their respective ROD commercial indoor air cleanup levels.

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MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Building Address	Access Received	Building Walkthrough Performed	Work Plan Submitted	EPA's Approval of Work Plan	Work Plan Implemented (60 days after EPA approval of Work Plan)	Report Submitted (60 days after completion of sampling)	Comments & Notes
550 Ellis St.	9/20/2012	9/20/2012	10/18/2012	10/26/2012	11/16/2012, 11/18/2012	1/15/2013	
605 Ellis St.	1/13/2011	2/1/2011	7/24/2011	2/17/2012	3/16/2012, 3/18/2012	5/15/2012	
625 Ellis St.	1/4/2011	2/1/2011	7/24/2011	2/17/2012	3/23/2012, 3/25/2012	5/22/2012	
636 Ellis St./491 Fairchild Dr.	8/1/2011	8/16/2011	8/30/2011	2/17/2012	5/23/2012, 6/3/2012	7/23/2012	
645 Ellis St.	1/4/2011	2/23/2011	7/24/2011	2/17/2012	3/23/2012, 3/25/2012	5/22/2012	
Fairchild Drive							
299 Fairchild Dr.	9/6/2012	9/19/2012	10/18/2012	10/26/2012	11/9/2012, 11/11/2012	1/8/2013	
411/415 Fairchild Dr.	1/21/2011	2/1/2011, 1/7/2014	7/24/2011	2/17/2012	4/13/2012 and 4/15/2012 (Suite 411), 2/7/2014 and 2/9/2014 (Suite 415)	6/12/2012 (Suite 411), 4/10/2014 (Suite 415)	
465 Fairchild Dr.	2/10/2011	4/8/2011	8/1/2011	2/17/2012	3/23/2012, 3/25/2012	5/22/2012	
National Avenue							
450 National Ave.	5/9/2014, 5/26/2016, 9/12/2017	5/27/2014, 5/26/2016, 8/30/2017, 9/5/2017	8/28/2017	8/28/2017	9/22/2017, 9/24/2017	10/26/2017	The building was renovated in 2017. The work included sealing cracks and conduits in the concrete slab. Post-renovation indoor air samples were collected on 22 September 2017 (HVAC on) and 24 September 2017 (HVAC off). All COC concentrations were below their respective ROD commercial indoor air cleanup levels. The results of the September 2017 sampling were provided to EPA in an email dated 26 October 2017.
625/627 National Ave.	9/24/2012	10/4/2012	10/18/2012	10/26/2012	11/15/2012, 11/19/2012	1/14/2013	
645 National Ave.	9/6/2012	9/20/2012	10/18/2012	10/26/2012	11/29/2012, 12/02/2012	1/28/2013	
23	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/14/2011	9/13/2011	
48	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/13/2011	9/13/2011	
109	4/11/2013	5/1/2013	9/3/2013	11/19/2015	11/23/2015	2/22/2016	
146	6/15/2011	6/23/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/13/2011	9/13/2011	
152	3/7/2013	3/14/2013, 4/1/2013	9/3/2013	11/19/2015	4/8/2016, 4/10/2016	6/20/2016	
153	1/29/2014	5/1/2013	1/30/2014	11/19/2015	12/1/2015	2/22/2016	
154	11/9/2011	11/29/2011	12/20/2011	2/17/2012	4/2/2012	6/1/2012	
156	5/28/2014	5/1/2013	6/3/2014	11/19/2015	12/1/2015	2/22/2016	

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MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Building Address	Access Received	Building Walkthrough Performed	Work Plan Submitted	EPA's Approval of Work Plan	Work Plan Implemented (60 days after EPA approval of Work Plan)	Report Submitted (60 days after completion of sampling)	Comments & Notes
503	6/15/2011	6/24/2011, 3/16/2017	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/12/2011, 5/18/2017, 5/31/2017	9/13/2011, 8/31/2017	On 1 March 2017, NASA notified Haley & Aldrich that the building became fully occupied in 2012. Unsealed cuts in the concrete slab and conduits were sealed on 27 April 2017. Indoor air samples were collected on 18/19 May 2017 in the southern and central suites, and on 31 May/1 June 2017 in the northern suite. The results were provided via email to EPA in an email dated 31 August 2017.
543	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/14/2011	9/13/2011	
Moffett Field							
547B	4/11/2013	5/1/2013	9/3/2013	11/19/2015	12/10/2015	2/22/2016	
547D	4/11/2013	5/1/2013	9/3/2013	11/19/2015	11/23/2015	2/22/2016	
554	6/15/2011	6/23/2011, 6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/12/2011	9/13/2011	
556	11/5/2015	12/11/2015, 11/15/2019	3/14/2016	--	3/31/2016	6/20/2016	
569	6/15/2011	7/1/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/14/2011	9/13/2011	
572	4/11/2013	5/1/2013	9/3/2013	11/19/2015	11/23/2015	2/22/2016	
583A	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans were not submitted to EPA.		7/11/2011	9/13/2011	
583B	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/11/2011	9/13/2011	
583C	6/15/2011	6/23/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/11/2011	9/13/2011	
596	6/15/2011	6/24/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/12/2011	9/13/2011	
944	6/15/2011	7/1/2011	Sample location/duration approved by EPA during walkthroughs. Per agreement with EPA, building-specific work plans will not be submitted to EPA.		7/13/2011	9/13/2011	
945	4/11/2013	5/1/2013	9/3/2013	11/19/2015	11/23/2015	2/22/2016	

TABLE 1
STATUS OF AIR SAMPLING FOR BUILDINGS WITH NO VAPOR INTRUSION RESPONSE ACTION
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Building Address	Access Received	Building Walkthrough Performed	Work Plan Submitted	EPA's Approval of Work Plan	Work Plan Implemented (60 days after EPA approval of Work Plan)	Report Submitted (60 days after completion of sampling)	Comments & Notes
Residences							
Residence 38	7/16/2012	11/29/2012	12/4/2012	12/4/2012	12/9/2012	12/19/2012	
Residence 156	--	--	5/16/2017	5/16/2017	5/23/2017 - 5/24/2017	6/26/2017	On 26 April 2017, EPA informed the MEW Companies of a new residential development. Geosyntec collected soil gas, sub-slab soil gas, indoor, outdoor, and crawlspace air samples in May 2017. Based on the assessment, the property is proposed to be classified as Tier B according to the ROD Amendment tiering classification. EPA concurred with the preliminary tier classification on 7 July 2017, pending the results of pre-occupancy indoor air sampling. Pre-occupancy indoor air sampling was performed on 6-7 August 2018, and all COC concentrations were below their respective ROD residential indoor air cleanup levels and consistent with outdoor air. The results supporting the Tier B property status were submitted to EPA on 18 September 2018.
Private Residence	--	--	7/8/2016	7/8/2016	7/13/2016 - 7/15/2016	7/20/2016	On 21 June 2016, EPA informed the MEW Companies of a new residential development. Geosyntec completed a soil vapor assessment on 13 July 2016 through 15 July 2016. The results were transmitted to the EPA on 20 July 2016 with follow-up information provided on 29 July 2016. Based on the assessment, Geosyntec proposed classifying the property as Tier B according to the ROD Amendment tiering classification. EPA verbally concurred with the preliminary tier classification on 29 July 2016, pending the results of pre-occupancy indoor air sampling. Pre-occupancy air samples were collected between 29-30 May 2019. All COC concentrations were not detected. The results supporting a Tier B property status were submitted to the EPA on 24 June 2019.
Private Residence	6/11/2019	--	6/12/2019	6/14/2019	7/18/2019	--	On 15 May 2019, EPA informed the MEW Companies of a new residential development. Geosyntec collected soil gas and sub-slab soil gas samples 18 July 2019.

NOTES:
-- - Not applicable
HVAC - Heating, ventilation, and air conditioning
COC - Chemicals of concern listed in the EPA's Record of Decision (ROD) Amendment for the vapor intrusion pathway including tetrachloroethene; trichloroethene (TCE); 1,1-dichloroethane; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethene; and vinyl chloride

TABLE 2
VAPOR INTRUSION RESPONSE ACTION FOR TIER 1, 2, AND A BUILDINGS
AUGUST 2019
MOUNTAIN VIEW, CALIFORNIA

Building Address	Tier Designation	Type of Response Action	Pilot Test Work Plan Submitted (45 days after EPA's notification)	Pilot Test Results Memorandum Submitted to EPA (14 days after completion of Pilot Test)	Remedial Design Submitted (60 days after EPA written notification, or 60 days after submittal of Pilot Test Results)	EPA Approval of Remedial Design	OM&M Plan Submitted (60 days after completion of construction)	Initiation of construction of engineered vapor intrusion control system (90 days after EPA approval of design)	EPA Approval of OM&M Plan	Response Action Implementation Report Submitted (60 days after implementation of remedial action/response action, or 60 days after EPA written notification)	EPA Approval of Response Action Implementation Report	Comments & Notes
East Middlefield Road												
340 E. Middlefield Rd.	2 (pending)	Passive SSV and vapor barrier	Not Applicable	Not Applicable	11/15/2012	11/16/2012	4/9/2014	October 2012	Pending	6/26/2013	Pending	The building was constructed in 2012 with a vapor barrier and a passive SSV system. Indoor air concentrations (including TCE) were below their respective ROD commercial indoor air cleanup levels. Haley & Aldrich performed the annual SSV system inspection on 23 February 2018. No operational issues were identified. The building became vacant in December 2018. No tenant improvements are planned at this time. Haley & Aldrich performed the annual SSV system inspection on 8 February 2019. No operational issues were identified.
440 E. Middlefield Rd.	2 (pending)	SSD	9/17/2013	2/6/2015	4/7/2015; Revised 6/23/2015	5/21/2015	7/21/2015	6/27/2015	Pending	12/18/2015	Pending	The SSD system was started up on 12 September 2015, and indoor air confirmation samples were collected on 27 September 2015. Based on our evaluation of the data collected subsequent to implementation of the SSD system and with the HVAC off, the SSD system has effectively reduced all COC concentrations in indoor air to below their respective ROD commercial indoor air cleanup levels. The SSD system blowers were replaced in December 2017 and continue to operate normally. Haley & Aldrich performed the quarterly SSD system inspection on 8 November 2018. No operational issues were identified during the inspection. The building became vacant in December 2018. Tenant improvements, which include cuts to the concrete slab began in February 2019. Haley & Aldrich will conduct a walkthrough and collect post-renovation indoor air samples after completion of tenant improvements. Haley & Aldrich performed the quarterly SSD inspection on 8 March 2019, 10 June 2019, 4 September 2019, and 2 December 2019 and no operational issues were identified.

TABLE 2
VAPOR INTRUSION RESPONSE ACTION FOR TIER 1, 2, AND A BUILDINGS
AUGUST 2019
MOUNTAIN VIEW, CALIFORNIA

Building Address	Tier Designation	Type of Response Action	Pilot Test Work Plan Submitted (45 days after EPA's notification)	Pilot Test Results Memorandum Submitted to EPA (14 days after completion of Pilot Test)	Remedial Design Submitted (60 days after EPA written notification, or 60 days after submittal of Pilot Test Results)	EPA Approval of Remedial Design	OM&M Plan Submitted (60 days after completion of construction)	Initiation of construction of engineered vapor intrusion control system (90 days after EPA approval of design)	EPA Approval of OM&M Plan	Response Action Implementation Report Submitted (60 days after implementation of remedial action/response action, or 60 days after EPA written notification)	EPA Approval of Response Action Implementation Report	Comments & Notes
Fairchild Drive												
277 Fairchild Dr. - Redevelopment	2 (pending)	SSD and vapor barrier	Not Applicable	Not Applicable	4/25/2016; Revised 1/6/2017	5/23/2018	--	11/13/2018	--	--	--	Construction of the SSD system began in November 2018 and completion is expected in the first quarter of 2020. Lot 1 - The construction activities are complete and will be used as a leasing office. The SSD system at Lot 1 began operating on 28 August 2019 to allow Warmington to obtain a permit for occupancy from the City of Mountain View. Pre-occupancy indoor air sampling will be performed after the SSD system at Lot 2 is started. Lots 2 - 4 - The vapor barrier and SSD system has been installed and pre-occupany sampling will be performed after construction is completed. Building C - The SSD system beneath Building C began operating on 8 August 2019. Haley & Aldrich performed pre-occupancy indoor air sampling in Building C on 15-16 August 2019, approximately one week following startup. We inspected Building C's SSD system concurrently with the indoor air sampling on 15 August 2019 and collected influent and effluent air samples. The system was subsequently inspected on 18 October 2019 and 20 November 2019 and was operating as designed. The pre-occupancy indoor air sampling showed indoor air concentrations of PCE and 1,1-DCA above their respective ROD residential indoor cleanup level. But because 1,1-DCA has not been detected in soil gas, and PCE has been detected in only one sample at 6.2 µg/m^3, PCE and 1,1-DCA indoor air concentrations are not from vapor intrusion. The pre-occupancy sampling results were transmitted to EPA and Warmington in an email dated 28 August 2019. Additional air samples were collected on 23 September 2019. Building D - The SSD system beneath Building D began operating on 15 October 2019. Haley & Aldrich performed pre-occupancy indoor air sampling in Building C on 27-28 October 2019, approximately one to two weeks following startup. We inspected Building D's SSD system concurrently with the indoor air sampling on 28 October 2019 and collected influent and effluent air samples. The system was subsequently inspected on 20 November 2019 and 31 December 2019 and was operating as designed. The pre-occupancy indoor air sampling showed indoor air concentrations of PCE and 1,1-DCA above their respective ROD residential indoor cleanup level. But because 1,1-DCA has not been detected in soil gas, and PCE has been detected in only one sample at 6.2 µg/m^3, PCE and 1,1-DCA indoor air concentrations are not from vapor intrusion. The pre-occupancy sampling results were transmitted to EPA and Warmington in an email dated 4 November 2019. Additional air samples were collected on 4 December 2019. Building E - The vapor barrier and SSD system has been installed and pre-occupany sampling will be performed after construction is completed. Building F - The vapor barrier and SSD system has been installed and pre-occupany sampling will be performed after construction is completed.

TABLE 2
VAPOR INTRUSION RESPONSE ACTION FOR TIER 1, 2, AND A BUILDINGS
AUGUST 2019
MOUNTAIN VIEW, CALIFORNIA

Building Address	Tier Designation	Type of Response Action	Pilot Test Work Plan Submitted (45 days after EPA's notification)	Pilot Test Results Memorandum Submitted to EPA (14 days after completion of Pilot Test)	Remedial Design Submitted (60 days after EPA written notification, or 60 days after submittal of Pilot Test Results)	EPA Approval of Remedial Design	OM&M Plan Submitted (60 days after completion of construction)	Initiation of construction of engineered vapor intrusion control system (90 days after EPA approval of design)	EPA Approval of OM&M Plan	Response Action Implementation Report Submitted (60 days after implementation of remedial action/response action, or 60 days after EPA written notification)	EPA Approval of Response Action Implementation Report	Comments & Notes
331 Fairchild Dr.	2 (pending)	Passive SSV and vapor barrier	Not Applicable	Not Applicable	2/13/2013	9/30/2013	11/27/2013	October 2012	Pending	1/31/2014	Pending	Building was constructed with a vapor barrier and a passive SSV system. All indoor air concentrations of COCs were below their respective ROD commercial indoor air cleanup levels. Haley & Aldrich performed the annual SSV system inspection on 24 August 2018. No operational issues were identified during the inspection.
National Avenue												
455/465 National Ave.	2 (pending)	HVAC	7/17/2013	11/14/2013	--	--	--	--	--	2/4/2014	Pending	Based on the HVAC off sampling results, an SSD Pilot Test Work Plan was submitted to the EPA. The SSD pilot test showed that SSD is not feasible. Since SSD is not feasible, the HVAC system operated seven days per week when the building is occupied as the mitigation measure. Confirmation samples collected in December 2013, July 2014, and January 2015 showed indoor air concentrations of COCs below their respective ROD commercial indoor air cleanup levels. A telemetry system was installed on 17 May 2016 to remotely notify Haley & Aldrich in the event the HVAC system is not operating when the HVAC system is scheduled to operate in occupied mode. Tenant improvements were substantially completed in March 2018, including renovations to the southern portion of the building to remove a bathroom and laundry room, and addition of a new outside air ventilation unit. Haley & Aldrich collected post-renovation indoor air samples on 11 May 2018 with the HVAC system operating, and all COC concentrations were below their respective ROD commercial indoor air cleanup levels. The results were provided in an email to EPA dated 5 June 2018 and will be included in the Annual VI Status Report due to EPA on 15 April 2019. The building became vacant in November 2018. On 31 January 2019, Haley & Aldrich adjusted the HVAC system to operate daily between 14:00 and 17:00 while the building is unoccupied.

TABLE 2
VAPOR INTRUSION RESPONSE ACTION FOR TIER 1, 2, AND A BUILDINGS
AUGUST 2019
MOUNTAIN VIEW, CALIFORNIA

Building Address	Tier Designation	Type of Response Action	Pilot Test Work Plan Submitted (45 days after EPA's notification)	Pilot Test Results Memorandum Submitted to EPA (14 days after completion of Pilot Test)	Remedial Design Submitted (60 days after EPA written notification, or 60 days after submittal of Pilot Test Results)	EPA Approval of Remedial Design	OM&M Plan Submitted (60 days after completion of construction)	Initiation of construction of engineered vapor intrusion control system (90 days after EPA approval of design)	EPA Approval of OM&M Plan	Response Action Implementation Report Submitted (60 days after implementation of remedial action/response action, or 60 days after EPA written notification)	EPA Approval of Response Action Implementation Report	Comments & Notes
National Avenue												
615 National Ave.	2 (pending)	SSD (pending)	3/20/2017	6/12/2017	8/9/2017	10/5/2017	12/4/2017	4/12/2017	Pending	10/23/2018	Pending	Although all COC concentrations were below their respective ROD commercial indoor air cleanup levels, the MEW Companies voluntarily proceeded with installation of an SSD system as a preventative measure. The system was constructed in phases. A design for an SSD system for the building was submitted to the EPA on 9 August 2017, which the EPA approved on 5 October 2017. The system started operations on 12 July 2018. Haley & Aldrich conducted the first post-startup monitoring event on 5 August 2018, including collection of post-startup indoor air samples with the HVAC system off. No operational issues were identified, and all COC concentrations were below their respective ROD commercial indoor air cleanup levels. The indoor air sampling results were transmitted to EPA on 28 August 2018 and included in the Building-specific Vapor Intrusion Response Action Implementation Report that was submitted to the EPA on 23 October 2018. Haley & Aldrich conducted the third post-startup monitoring event on 23 October 2018, and no operational issues were identified during the inspection. Haley & Aldrich conducted the fourth post-startup system inspection event on 8 March 2019. No operational issues were identified. Haley & Aldrich also collected the second and final round of post-startup indoor air samples on 8 and 24 March 2019 with the HVAC system on and off, respectively. Post-startup samples collected in August 2018 and March 2019 showed indoor air concentrations of COCs below their respective ROD commercial indoor air cleanup levels. The indoor air sampling results were submitted to EPA on 15 May 2019. Haley & Aldrich performed the second quarter SSD inspection on 10 June 2019, the third quarter SSD inspection on 4 September 2019, and the fourth quarter SSD inspection on 2 December 2019 and no operational issues were identified.
National Avenue												
620 National Ave.	2 (pending)	SSD and vapor barrier	Not Applicable	Not Applicable	8/25/2014 (as part of redevelopment plan); Revised 6/3/2015	5/5/2015	7/2/2015	6/12/2015	Pending	3/21/2018	Pending	Property was redeveloped with a vapor barrier and an SSD system. System startup was on 10 and 11 October 2017. Geosyntec was on-site for startup monitoring for the week following startup, 18 and 25 October 2017, 1 November 2017, and 1 December 2017. In addition, Geosyntec conducted an on-site meeting with EPA on 31 October 2017 to discuss pre-occupancy indoor air sampling locations. Pre-occupancy indoor air sampling conducted the week of 22 January 2018 showed indoor air concentrations of COCs below their respective ROD commercial indoor air cleanup levels. The building has now entered routine monitoring.

TABLE 2
VAPOR INTRUSION RESPONSE ACTION FOR TIER 1, 2, AND A BUILDINGS
AUGUST 2019
MOUNTAIN VIEW, CALIFORNIA

Building Address	Tier Designation	Type of Response Action	Pilot Test Work Plan Submitted (45 days after EPA's notification)	Pilot Test Results Memorandum Submitted to EPA (14 days after completion of Pilot Test)	Remedial Design Submitted (60 days after EPA written notification, or 60 days after submittal of Pilot Test Results)	EPA Approval of Remedial Design	OM&M Plan Submitted (60 days after completion of construction)	Initiation of construction of engineered vapor intrusion control system (90 days after EPA approval of design)	EPA Approval of OM&M Plan	Response Action Implementation Report Submitted (60 days after implementation of remedial action/response action, or 60 days after EPA written notification)	EPA Approval of Response Action Implementation Report	Comments & Notes
Moffett Field												
Building 20	2 (pending)	Active SSV	Not Applicable	Not Applicable	--	--	--	2008	--	--	--	Basement ventilation system was designed and implemented by NASA in 2008 and operates 24 hours per day, seven days per week. Haley & Aldrich installed locks on the electrical outlets associated with each fan on 18 October 2017 to prevent occupants from unplugging the fans. On 13 February 2019, Haley & Aldrich received an email from NASA Facilities, stating that the negative pressure created by the ventilation system may potentially be inhibiting the operation of the boiler. At NASA Facilities' request, Haley & Aldrich shut down the system at approximately 15:00. On 15 February 2019, Haley & Aldrich met with NASA Facilities to discuss the boiler operations and the basement ventilation system. NASA's Facilities staff determined that the operation of the basement ventilation system does not inhibit the operation of the boiler. Haley & Aldrich turned the system on at approximately 13:00.
Residences												
Private Residence	A (pending)	Passive SSV and vapor barrier	Not Applicable	Not Applicable	8/19/2016	9/7/2016	12/9/2016	10/1/2016	Pending	10/11/2018	Pending	On 21 June 2016, EPA informed the MEW Companies of a new residential development. Geosyntec submitted a soil vapor sampling plan to EPA on 6 July 2016, which EPA approved on 7 July 2016. Geosyntec completed the soil vapor assessment on 13 July 2016 through 15 July 2016. The results were transmitted to the EPA on 20 July 2016 with follow-up information provided on 29 July 2016. Based on the assessment, the property was classified as Tier A according to the ROD Amendment tiering classification. Geosyntec finalized a passive SSV design document and construction of the system started 1 October 2016 and is nearing completion. Pre-occupancy indoor air sampling was performed on 6-7 August 2018, and all COC concentrations were below their respective ROD residential indoor air cleanup levels and consistent with outdoor air. The air sampling results were included in the Building-specific Vapor Intrusion Response Action Implementation Report that was submitted to the EPA on 11 October 2018. The first round of post-occupancy indoor air sampling was conducted between 4-5 February 2019. The results were submitted to the EPA on 1 March 2019.
Residences												
Residence 4	2 (pending)	Earthen cellar ventilation system	Not Applicable	Not Applicable	--	--	--	2004	--	--	--	Earthen cellar ventilation system operates seven hours per day, seven days per week. The most recent air sampling event showed that all indoor and pathway air concentrations were below their respective ROD residential indoor air cleanup levels. Haley & Aldrich performed the annual system inspection on 8 February 2019. No operational issues were identified. A telemetry system was installed on 10 June 2019 to remotely notify Haley & Aldrich in the event the earthen cellar ventilation system is not operating when the system is scheduled to operate. Haley & Aldrich performed a system inspection following the installation. No operational issues were identified during the inspection.

NOTES:

HVAC - Heating, ventilation, and air conditioning
OM&M - Operations, maintenance, and monitoring
COC - Chemicals of concern listed in the EPA's Record of Decision (ROD) Amendment for the vapor intrusion pathway including tetrachloroethene; trichloroethene (TCE); 1,1-dichloroethane; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethene; and vinyl chloride

SSV - Sub-slab ventilation
SSD - Sub-slab depressurization
SOW - EPA's Statement of Work, Remedial Design and Remedial Action to Address the Vapor Intrusion Pathway
- - Unknown or not available

TABLE 3
AIR SAMPLING RESULTS - 277 FAIRCHILD DRIVE
MIDDLEFIELD-ELLIS-WHISMAN SUPERFUND STUDY AREA
MOUNTAIN VIEW, CALIFORNIA

					Chemicals of Concern						
Location / Sample ID	**Sample Date**	**Sample Purpose**	**Sample Duration (hours)**	**Sample Type**	**1,1-DCA**	**1,1-DCE**	**cis-1,2-DCE**	**PCE**	**trans-1,2-DCE**	**TCE**	**Vinyl chloride**
Building C											
277AMB-C1	08/15/2019	Indoor	24	Primary	0.072 J	< 0.020	0.020 J	2.1	0.072 J	0.057 J	< 0.026
277AMB-C1	09/23/2019	Indoor	24	Primary	< 0.081	< 0.079	< 0.079	0.51	< 0.079	0.19	< 0.051
277AMB-C2	08/15/2019	Indoor	24	Primary	3.7	< 0.020	< 0.020	1.6	0.066 J	0.22	< 0.026
277AMB-C2	08/15/2019	Indoor	24	Duplicate	4.1	< 0.20	< 0.20	1.5	< 0.20	0.29 J	< 0.26
277AMB-C2	09/23/2019	Indoor	24	Primary	1.3	< 0.079	< 0.079	0.42	< 0.079	< 0.11	< 0.051
277AMB-C3	08/15/2019	Indoor	24	Primary	< 0.20	< 0.20	< 0.20	130	< 0.20	< 0.27	< 0.26
277AMB-C3	09/23/2019	Indoor	24	Primary	0.23	< 0.079	< 0.079	29	< 0.079	< 0.11	< 0.051
Building D											
277AMB-D1	10/27/2019	Indoor	24	Primary	< 0.081	< 0.079	< 0.079	4.7	< 0.079	< 0.11	< 0.051
277AMB-D1	12/04/2019	Indoor	24	Primary	< 0.13	< 0.063	< 0.13	1.2	< 0.63	< 0.17	< 0.041
277AMB-D2	10/27/2019	Indoor	24	Primary	0.097	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
277AMB-D3	10/27/2019	Indoor	24	Primary	0.22	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
277AMB-D4	10/27/2019	Indoor	24	Primary	0.39 J	< 0.079	< 0.079	11 J	< 0.079	< 0.11	< 0.051
277AMB-D4	10/27/2019	Indoor	24	Duplicate	0.19 J	< 0.079	< 0.079	5.0 J	< 0.079	< 0.11	< 0.051
277AMB-D4	12/04/2019	Indoor	24	Primary	< 0.13	< 0.063	< 0.12	2.0	< 0.63	< 0.17	< 0.040
Outdoor											
277OUT-1	08/15/2019	Outdoor	24	Primary	< 0.020	< 0.020	< 0.020	0.21	0.054 J	< 0.027	< 0.026
277OUT-1	09/23/2019	Outdoor	24	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
277OUT-1	10/27/2019	Outdoor	24	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
277OUT-1	12/04/2019	Outdoor	24	Primary	< 0.12	< 0.059	< 0.12	< 0.20	< 0.59	< 0.16	< 0.038
	ROD Residential Indoor Air Cleanup Level				2	210	60	0.4	60	1	0.2

TABLE 3
AIR SAMPLING RESULTS - 277 FAIRCHILD DRIVE
MIDDLEFIELD-ELLIS-WHISMAN SUPERFUND STUDY AREA
MOUNTAIN VIEW, CALIFORNIA

Notes:

All units are micrograms per cubic meter (µg/m^3).
<0.020 - Denotes chemical was not detected at or above the laboratory method detection limit shown.
J - Denotes estimated result.
Chemicals of Concern and ROD Residential Indoor Air Cleanup Levels as defined in EPA's "Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California," 16 August 2010.
Building C sub-slab depressurization system began operation on 8 August 2019.
Building D sub-slab depressurization system began operation on 15 October 2019.
N/A - Not applicable. Building does not have outside makeup air.

DCA - Dichloroethane
DCE - Dichloroethene
PCE - Tetrachloroethene
TCE - Trichloroethene

TABLE 4

SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING DATA - 277 FAIRCHILD DRIVE

MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD

MOUNTAIN VIEW, CALIFORNIA

Date	Pressure Monitoring Points - Pressure Differential (inH_2O)									Equipment Enclosure - E-100 (Lots 1 & 2)						Equipment Enclosure - E-300 (Building C)						Equipment Enclosure - E-400 (Building D)					
	Lot 1	Building C			Building D																					
	SS-01	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	SS-12	System On/Off	Influent Vacuum (inH_2O)	Effluent Flow Rate (SCFM)	Effluent Temperature (deg F)	Nearest Building Wall (dBA)	Between Fence and Enclosure (dBA)	System On/Off	Influent Vacuum (inH_2O)	Effluent Flow Rate (SCFM)	Effluent Temperature (deg F)	Nearest Building Wall (dBA)	Between Fence and Enclosure (dBA)	System On/Off	Influent Vacuum (inH_2O)	Effluent Flow Rate (SCFM)	Effluent Temperature (deg F)	Nearest Building Wall (dBA)	Between Fence and Enclosure (dBA)
8/8/2019 [1]	-0.027	-0.324	-0.346	-0.367	--	--	--	--	--	On	-2.5	41	103	58	63	On	-4.0	62	104	51	61	Off	--	--	--	--	--
8/15/2019	--	-0.273	-0.300	-0.307	--	--	--	--	--	On	--	--	--	--	--	On	-4.0	60	104	--	--	Off	--	--	--	--	--
9/4/2019	-0.019	--	--	--	--	--	--	--	--	On	-2.3	54	--	62	57	On	--	--	--	--	--	Off	--	--	--	--	--
9/23/2019	-0.010	-0.260	-0.375	-0.383	--	--	--	--	--	On	-1.5	54	98	56	56	On	-4.0	60	106	60	59	Off	--	--	--	--	--
10/15/2019 [1]	--	--	--	--	-0.377	-0.392	-0.410	-0.419	-0.455	On	--	--	--	--	--	On	--	--	--	--	--	On	-2.8	72	93	--	--
10/18/2019	-0.011	-0.298	-0.322	-0.335	--	--	--	--	-0.492	On	-1.5	53	85	--	--	On	-4.0	59	90	--	--	On	-2.9	67	84	--	--
10/28/2019	--	--	--	--	-0.321	-0.342	-0.367	-0.385	-0.441	On	--	--	--	--	--	On	--	--	--	--	--	On	-2.9	64	86	--	--
11/20/2019	-0.016	-0.311	-0.334	-0.371	-0.333	-0.371	-0.406	-0.425	-0.458	On	-2.0	50	82	62	63	On	-4.0	55	79	61	62	On	-3.0	55	78	60	62
12/4/2019	--	--	--	--	-0.200	-0.217	-0.239	-0.261	-0.281	On	--	--	--	--	--	On	--	--	--	--	--	On	-3.0	47	88	57	59
12/31/2019	--	--	--	--	-0.288	-0.313	-0.335	-0.355	-0.417	On	--	--	--	--	--	On	--	--	--	--	--	On	-3.0	66	83	61	60

Notes:

SCFM - standard cubic feet per minute

dBA - decibels

deg F - degrees Fahrenheit

inH_2O - inches of water column

-- - data not measured or system not operating

[1] Startup measurements are shown for the final configuration. E-100 and E-300 began operation on 8 August 2019, and E-400 began operation on 15 October 2019.

TABLE 5

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 277 FAIRCHILD DRIVE
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

		E-100 (Lots 1 & 2)			E-300 (Building C)			E-400 (Building D)			Comparison with BAAQMD Toxic Air Contaminant Trigger Levels [2]						
Chemical[1]	Sample Date	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Total SSD Emissions [3] (lb/hr)	Period [4] (days)	SSD Emissions in Period [5] (lb)	Cumulative Emissions [6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	Meets BAAQMD Trigger Level?
2-Butanone (Methyl Ethyl Ketone)	8/15/2019	--	--	--	120	6.2	60	--	--	--	2.7E-05	--	--	1.5E-02	2.9E+01	NA	Yes
	9/4/2019	22	15	54	--	--	--	--	--	--	4.4E-06	20	2.1E-03				
	10/18/2019	< 12	12	53	< 12	12	59	--	--	--	5.0E-06	44	5.3E-03				
	10/28/2019	--	--	--	--	--	--	< 12	12	64	2.9E-06	10	6.9E-04				
	11/20/2019	< 12	12	50	< 12	12	55	< 12	12	55	7.2E-06	23	4.0E-03				
	12/31/2019	--	--	--	--	--	--	< 12	12	66	3.0E-06	41	2.9E-03				
Carbon Disulfide	8/15/2019	--	--	--	110	6.6	60	--	--	--	2.5E-05	--	--	1.6E-02	1.4E+01	3.1E+04	Yes
	9/4/2019	< 16	16	54	--	--	--	--	--	--	3.2E-06	20	1.6E-03				
	10/18/2019	15	12	53	< 13	13	59	--	--	--	5.9E-06	44	6.2E-03				
	10/28/2019	--	--	--	--	--	--	< 13	13	64	3.1E-06	10	7.5E-04				
	11/20/2019	< 13	13	50	< 13	13	55	< 13	13	55	7.8E-06	23	4.3E-03				
	12/31/2019	--	--	--	--	--	--	< 13	13	66	3.2E-06	41	3.2E-03				
Chloroform	8/15/2019	--	--	--	5.7	3.9	60	--	--	--	1.3E-06	--	--	9.5E-03	3.3E-01	2.0E+01	Yes
	9/4/2019	< 6.3	6.3	54	--	--	--	--	--	--	1.3E-06	20	6.1E-04				
	10/18/2019	< 4.9	4.9	53	19	5.0	59	--	--	--	5.2E-06	44	5.5E-03				
	10/28/2019	--	--	--	--	--	--	< 5.0	5.0	64	1.2E-06	10	2.9E-04				
	11/20/2019	< 5.0	5.0	50	< 5.0	5.0	55	< 5.0	5.0	55	3.0E-06	23	1.7E-03				
	12/31/2019	--	--	--	--	--	--	6.3	5.0	66	1.6E-06	41	1.5E-03				
Ethylbenzene	8/15/2019	--	--	--	16	4.6	60	--	--	--	3.6E-06	--	--	7.2E-03	NA	3.3E+01	Yes
	9/4/2019	< 5.6	5.6	54	--	--	--	--	--	--	1.1E-06	20	5.4E-04				
	10/18/2019	< 4.4	4.4	53	< 4.4	4.4	59	--	--	--	1.8E-06	44	1.9E-03				
	10/28/2019	--	--	--	--	--	--	< 4.4	4.4	64	1.1E-06	10	2.5E-04				
	11/20/2019	11	4.4	50	7.5	4.5	55	12	4.5	55	6.1E-06	23	3.4E-03				
	12/31/2019	--	--	--	--	--	--	< 4.4	4.4	66	1.1E-06	41	1.1E-03				
Toluene	8/15/2019	--	--	--	38	4.0	60	--	--	--	8.5E-06	--	--	1.2E-02	8.2E+01	1.2E+04	Yes
	9/4/2019	< 4.9	4.9	54	--	--	--	--	--	--	9.9E-07	20	4.8E-04				
	10/18/2019	< 3.8	3.8	53	< 3.8	3.8	59	--	--	--	1.6E-06	44	1.7E-03				
	10/28/2019	--	--	--	--	--	--	< 3.9	3.9	64	9.3E-07	10	2.2E-04				
	11/20/2019	26	3.9	50	18	3.9	55	34	3.9	55	1.6E-05	23	8.6E-03				
	12/31/2019	--	--	--	--	--	--	< 3.8	3.8	66	9.4E-07	41	9.2E-04				

TABLE 5

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 277 FAIRCHILD DRIVE
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

		E-100 (Lots 1 & 2)			E-300 (Building C)			E-400 (Building D)			Comparison with BAAQMD Toxic Air Contaminant Trigger Levels [2]						
Chemical[1]	Sample Date	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Effluent Analytical Result ($\mu g/m^3$)	Effluent Reporting Limit ($\mu g/m^3$)	Flow Rate (SCFM)	Total SSD Emissions [3] (lb/hr)	Period [4] (days)	SSD Emissions in Period [5] (lb)	Cumulative Emissions [6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	Meets BAAQMD Trigger Level?
m,p-Xylene	8/15/2019	--	--	--	14	9.1	60	--	--	--	3.1E-06	--	--	2.1E-02	4.9E+01	2.7E+04	Yes
	9/4/2019	< 5.6	5.6	54	--	--	--	--	--	--	1.1E-06	20	5.4E-04				
	10/18/2019	< 4.4	4.4	53	< 4.4	4.4	59	--	--	--	1.8E-06	44	1.9E-03				
	10/28/2019	--	--	--	--	--	--	< 4.4	4.4	64	1.1E-06	10	2.5E-04				
	11/20/2019	55	4.4	50	38	4.5	55	62	4.5	55	3.1E-05	23	1.7E-02				
	12/31/2019	--	--	--	--	--	--	< 4.4	4.4	66	1.1E-06	41	1.1E-03				
o-Xylene	8/15/2019	--	--	--	< 4.6	4.6	60	--	--	--	1.0E-06	--	--	1.0E-02	4.9E+01	2.7E+04	Yes
	9/4/2019	< 5.6	5.6	54	--	--	--	--	--	--	1.1E-06	20	5.4E-04				
	10/18/2019	< 4.4	4.4	53	< 4.4	4.4	59	--	--	--	1.8E-06	44	1.9E-03				
	10/28/2019	--	--	--	--	--	--	< 4.4	4.4	64	1.1E-06	10	2.5E-04				
	11/20/2019	21	4.4	50	14	4.4	55	24	4.5	55	1.2E-05	23	6.5E-03				
	12/31/2019	--	--	--	--	--	--	< 4.4	4.4	66	1.1E-06	41	1.1E-03				

Abbreviations and Notes:

$\mu g/m_3$ = micrograms per cubic meter

BAAQMD = Bay Area Air Quality Management District

lb/hr = pounds per hour

lb/yr = pounds per year

NA = BAAQMD Toxic Air Contaminant Trigger Level not established for chemical

< 3.1 = Denotes chemical were not detected at or above the laboratory reporting limit shown.

J+ = Denotes estimated concentration, biased high.

SCFM = standard cubic feet per minute

[1] Only detected compounds for which BAAQMD Toxic Air Contaminant Trigger Levels were established are shown in this table.

[2] BAAQMD Toxic Air Contaminant Trigger Levels are established in BAAQMD Table 2-5-1 (December 2016).

[3] Emissions are calculated as the cumulative emissions from all four treatment systems by multiplying the flow rate measured in the effluent flow measurement port by the corresponding detected concentration in the effluent sample and adjusting for the proper units. In the case of non-detections, SSD emissions per compound are calculated with the reporting limit.

[4] Period is calculated as the number of days between the previous sampling date and the next sampling date.

[5] Emissions in period is calculated as the SSD emissions times the period (days) times 24 (hours per day).

[6] Emissions are cumulative for the calendar year since startup (8/8/2019 for E-100 and E-300, and 10/15/2019 for E-400) and are presented in lb/yr.

TABLE 6
SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING DATA - 440 EAST MIDDLEFIELD ROAD
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Date	Suction Pits										Pressure Monitoring Points		Equipment Enclosure						Noise Measurements (dBA)					
	SP-01		SP-02		SP-03		SP-04		SP-05		SS-10	SS-11												
	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Influent Vacuum (inH_2O)	Influent Flow Rate (SCFM)	Effluent Flow Rate (SCFM)	Effluent Temperature (deg F)	Blower B-101 Status	Blower B-102 Status	Footpath next to enclosure door	Front of garbage enclosure	Footpath at corner of property	Parking stall north of enclosure	Parking stall next to light standard	Parking stall west of trash enclosure
9/12/2015[1]	-29.5	NM	-12.0	NM	-27.0	NM	-28.0	NM	-26.5	NM	-0.512	-0.275	-21	144	124	120	On	Off	60.9	60.6	61.6	63.1	60.4	NM
9/14/2015	-28.5	NM	-12.0	NM	-26.0	NM	-27.5	NM	-27.3	NM	-0.532	-0.277	-23	155	150	86	On	Off	NM	NM	NM	NM	NM	NM
9/17/2015	-28.0	NM	-12.0	NM	-25.0	NM	-26.5	NM	-25.5	NM	-0.578	-0.314	-24	172	169	114	On	Off	61.3	60.7	61.4	63.5	60.5	60.3
9/24/2015	-28.0	70	-16.0	15	-23.5	28	-27.0	12	-25.0	45	-0.621	-0.303	-27	164	158	130	On	Off	NM	NM	NM	NM	NM	NM
9/27/2015	-27.5	NM	-16.0	NM	-23.0	NM	-27.0	NM	-24.0	NM	-0.660	-0.320	-27	NM	NM	NM	On	Off	NM	NM	NM	NM	NM	NM
10/3/2015	-27.5	NM	-16.0	NM	-22.0	NM	-25.5	NM	-24.0	NM	-0.710	-0.320	-28	NM	NM	NM	On	Off	NM	NM	NM	NM	NM	NM
10/12/2015	-27.5	84	-12.5	21	-25.0	72	-27.3	32	-25.5	24	-0.680	-0.295	-24	162	145	147	On	Off	60.0	60.2	60.0	60.0	60.2	60.0
11/12/2015	-28.0	70	-12.0	50	-23.5	37	-26.0	50	-25.0	30	-0.640	-0.320	-25	160	130	128	On	Off	63.0	64.0	60.0	60.0	63.0	60.0
12/11/2015	-28.0	78	-12.0	32	-23.0	65	-26.5	62	-25.0	30	-0.812	-0.338	-25	133	137	125	On	Off	66.0	66.0	63.0	63.0	61.0	70.0
2/7/2016	-27.5	82	-13.0	25	-24.3	32	-26.0	24	-25.5	18	-0.727	-0.258	-24	156	138	139	On	Off	65.0	62.0	63.0	64.0	60.0	67.0
2/13/2016	-28.0	60	-12.5	26	-24.0	65	-26.0	26	-25.0	26	-0.750	-0.270	-24	124	125	132	On	Off	NM	NM	NM	NM	NM	NM
5/12/2016	-28.0	72	-13.0	15	-23.8	18	-26.0	12	-25.5	15	-0.734	-0.274	-24	125	125	146	On	Off	55.0	56.0	55.0	55.0	55.0	55.0
8/19/2016	-28.0	82	-12.5	19	-21.0	24	-26.0	13	-25.0	18	-0.912	-0.300	-24	134	121	151	On	Off	64.0	59.0	60.0	60.0	59.0	58.0
11/11/2016	-28.5	67	-13.0	30	-23.5	56	-25.5	29	-26.5	37	-0.795	-0.279	-23	123	128	137	On	Off	52.0	48.0	47.0	48.0	48.0	50.0
2/16/2017	-30.0	63	-12.0	70	-21.0	65	-25.5	50	-24.0	52	-0.932	-0.238	-30	133	125	145	Off	On	64.0	62.0	60.0	60.0	62.0	63.0
5/11/2017	-30.0	63	-12.0	15	-21.5	23	-26.5	14	-28.5	18	-0.887	-0.214	-30	149	122	130	Off	On	50.0	48.0	45.0	45.0	53.0	47.0
8/10/2017	NM	62	-11.5	18	-21.5	60	-25.5	13	-24.5	15	NM	NM	-28	117	95	170	On	Off	63.0	60.0	58.0	60.0	61.0	60.0
9/1/2017	-22.5	59	-11.5	17	-22.0	20	-25.5	12	-24.5	16	-0.945	-0.222	-28	121	94	175	On	Off	60.0	54.0	57.0	54.0	60.0	58.0
11/8/2017	-23.5	51	-12.0	16	-23.0	39	-26.0	11	-24.5	19	-0.795	-0.235	-22	105	80	166	On	Off	--	--	--	--	--	--
12/28/2017	-22.0	68	-11.0	16	-21.5	37	-26.0	25	-24.0	65	-0.934	-0.223	-34	164	148	119	On	Off	61.0	57.0	63.0	65.0	61.0	55.0
2/23/2018	-22.5	70	-11.0	48	-20.0	57	-26.0	51	-25.0	34	-0.988	-0.270	-36	175	129	103	On	Off	61.6	61.6	61.9	64.8	59.8	57.5
5/10/2018	-24.5	66	-11.0	21	-19.5	24	-25.0	16	-24.5	18	-1.025	-0.318	-37	140	111	118	Off	On	59.2	58.5	59.2	63.7	58.5	53.8
8/23/2018	-23.0	65	-11.0	20	-20.0	26	-25.0	16	-23.0	18	-1.215	-0.244	-40	138	124	114	On	Off	61.0	58.0	60.0	64.9	60.0	58.5
11/8/2018	-23.0	68	-11.5	22	-19.0	26	-25.5	14	-27.5	19	-1.158	-0.209	-40	148	113	127	Off	On	57.0	58.0	57.0	59.0	57.0	56.0
3/8/2019	-23.0	45	-11.0	30	-19.0	35	-26.0	55	-25.0	21	-3.0	-3.0	-60	130	96	124	On	Off	60.0	57.0	62.0	59.0	59.0	63.0
6/10/2019	-21.7	50	-10.5	28	-20.0	34	-25.0	38	-53.0	19	-7.0	-8.0	-62	111	70	168	Off	On	54.0	51.0	54.0	57.0	52.0	52.0
9/4/2019	-23.5	NM	-11.7	38	-20.0	44	-26.0	19	-55.0	25	-6.5	-6.5	-63	109	86	161	Off	On	61.5	58.7	61.3	66.1	57.6	54.8
12/2/2019	-48.0	40	-46.0	11	-48.0	54	-42.0	10	-45.0	23	-6.0	-5.0	-66	117	116	105	On	Off	58.0	59.0	58.0	60.0	59.0	60.0

NOTES:

SCFM - standard cubic feet per minute
dBA - decibels
deg F - degrees Fahrenheit
inH_2O - inches of water column
NM - data not measured

[1] Startup measurements are shown for the final configuration; refer to previous annual reports for additional measurements collected during system startup.
Temporary interior pressure monitoring point SS-09 was abandoned on 9/12/2015 upon completion of startup activities; the pressure differential was -0.030 inH_2O.
Conduit inside building wall sealed on 1/23/2019.

TABLE 7

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 440 EAST MIDDLEFIELD ROAD
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Chemical[1]	Sample Date	Analytical Result (µg/m^3)	Flow Rate (SCFM)	Comparison with BAAQMD Toxic Air Contaminant Trigger Levels [2]								
				SSD Emissions [3] (lb/hr)	Period [4] (Days)	SSD Emissions in Period [5] (lb)	Cumulative SSD Emissions [6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	% of BAAQMD Acute Trigger Level	% of BAAQMD Chronic Trigger Level	Below BAAQMD Trigger Level[3]
Benzene	3/8/2019	<1.3	96	4.7E-07	120	1.4E-03	8.5E-03	6.0E-02	2.9E+00	0.00078%	0.29%	Yes
	6/10/2019	3.2	70	8.4E-07	94	1.9E-03				0.0014%		
	9/4/2019	<3.3	86	1.1E-06	86	2.2E-03				0.0018%		
	12/2/2019	<3.3	117	1.4E-06	89	3.1E-03				0.0024%		
Benzyl Chloride[7]	3/8/2019	11	96	4.0E-06	120	1.1E-02	1.4E-02	5.3E-01	1.7E+00	0.00075%	0.81%	Yes
	6/10/2019	<4.1	70	1.1E-06	94	2.4E-03				0.00020%		
	9/4/2019	--	86	--	--	--				--		
	12/2/2019	--	117	--	--	--				--		
2-Butanone (Methyl Ethyl Ketone)	3/8/2019	56	96	2.0E-05	120	5.8E-02	8.9E-02	2.9E+01	NA	0.000070%	NA	Yes
	6/10/2019	19	70	5.0E-06	94	1.1E-02				0.000017%		
	9/4/2019	<12	86	3.8E-06	86	7.9E-03				0.000013%		
	12/2/2019	<12	117	5.3E-06	89	1.1E-02				0.000018%		
Carbon Disulfide	3/8/2019	< 2.5	96	9.0E-07	120	2.6E-03	3.3E-02	1.4E+01	3.1E+04	0.0000064%	0.00011%	Yes
	6/10/2019	8.9	70	2.3E-06	94	5.3E-03				0.000017%		
	9/4/2019	20	86	6.4E-06	86	1.3E-02				0.000046%		
	12/2/2019	<13	117	5.7E-06	89	1.2E-02				0.000041%		
Chlorobenzene	3/8/2019	6.2	96	2.2E-06	120	6.4E-03	1.5E-02	NA	3.9E+04	NA	0.000038%	Yes
	6/10/2019	<1.4	70	3.7E-07	94	8.3E-04				NA		
	9/4/2019	<4.8	86	1.5E-06	86	3.2E-03				NA		
	12/2/2019	<4.8	117	2.1E-06	89	4.5E-03				NA		
Chloroform	3/8/2019	2.6	96	9.4E-07	120	2.7E-03	1.2E-02	3.3E-01	1.5E+01	0.00028%	0.078%	Yes
	6/10/2019	1.5	70	3.9E-07	94	8.9E-04				0.00012%		
	9/4/2019	<5.1	86	1.6E-06	86	3.4E-03				0.00049%		
	12/2/2019	<5.1	117	2.2E-06	89	4.8E-03				0.00068%		
1,4-Dichlorobenzene	3/8/2019	19	96	6.9E-06	120	2.0E-02	3.1E-02	NA	7.2E+00	NA	0.43%	Yes
	6/10/2019	<2.4	70	6.3E-07	94	1.4E-03				NA		
	9/4/2019	<6.3	86	2.0E-06	86	4.2E-03				NA		
	12/2/2019	<6.3	117	2.8E-06	89	5.9E-03				NA		
Ethylbenzene	3/8/2019	9.0	96	3.2E-06	120	9.3E-03	1.8E-02	NA	3.3E+01	NA	0.054%	Yes
	6/10/2019	<1.7	70	4.5E-07	94	1.0E-03				NA		
	9/4/2019	<2.2	86	7.0E-07	86	1.5E-03				NA		
	12/2/2019	6.5	117	2.8E-06	89	6.1E-03				NA		
Styrene	3/8/2019	12	96	4.3E-06	120	1.2E-02	7.1E-02	4.6E+01	3.5E+04	0.0000094%	0.00020%	Yes
	6/10/2019	< 1.4	70	3.7E-07	94	8.3E-04				0.00000080%		
	9/4/2019	<36	86	1.2E-05	86	2.4E-02				0.000025%		
	12/2/2019	<36	117	1.6E-05	89	3.4E-02				0.000034%		
1,1,2,2-Tetrachloroethane	3/8/2019	12	96	4.3E-06	120	1.2E-02	2.6E-02	NA	1.4E+00	NA	1.8%	Yes
	6/10/2019	<2.7	70	7.1E-07	94	1.6E-03				NA		
	9/4/2019	<7.2	86	2.3E-06	86	4.8E-03				NA		
	12/2/2019	<7.2	117	3.2E-06	89	6.7E-03				NA		
Tetrachloroethene	3/8/2019	47	96	1.7E-05	120	4.9E-02	1.3E-01	4.4E+01	1.4E+01	0.000039%	0.90%	Yes
	6/10/2019	55	70	1.4E-05	94	3.3E-02				0.000033%		
	9/4/2019	30	86	9.6E-06	86	2.0E-02				0.000022%		
	12/2/2019	26	117	1.1E-05	89	2.4E-02				0.000026%		
Toluene	3/8/2019	44	96	1.6E-05	120	4.6E-02	6.5E-02	8.2E+01	1.2E+04	0.000019%	0.00054%	Yes
	6/10/2019	9.5	70	2.5E-06	94	5.6E-03				0.0000030%		
	9/4/2019	<3.9	86	1.2E-06	86	2.6E-03				0.0000015%		
	12/2/2019	12	117	5.3E-06	89	1.1E-02				0.0000064%		
1,1,1-Trichloroethane	3/8/2019	2.1	96	7.6E-07	120	2.2E-03	1.2E-02	1.5E+02	3.9E+04	0.00000050%	0.000031%	Yes
	6/10/2019	< 1.6	70	4.2E-07	94	9.5E-04				0.00000028%		
	9/4/2019	<5.7	86	1.8E-06	86	3.8E-03				0.0000012%		
	12/2/2019	<5.7	117	2.5E-06	89	5.3E-03				0.0000017%		

TABLE 7

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 440 EAST MIDDLEFIELD ROAD
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Chemical[1]	Sample Date	Analytical Result ($\mu g/m^3$)	Flow Rate (SCFM)	Comparison with BAAQMD Toxic Air Contaminant Trigger Levels [2]								
				SSD Emissions [3] (lb/hr)	Period [4] (Days)	SSD Emissions in Period [5] (lb)	Cumulative SSD Emissions [6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	% of BAAQMD Acute Trigger Level	% of BAAQMD Chronic Trigger Level	Below BAAQMD Trigger Level[3]
Trichloroethene	3/8/2019	130	96	4.7E-05	120	1.4E-01	3.3E-01	NA	4.1E+01	NA	0.81%	Yes
	6/10/2019	120	70	3.1E-05	94	7.1E-02				NA		
	9/4/2019	96	86	3.1E-05	86	6.3E-02				NA		
	12/2/2019	66	117	2.9E-05	89	6.2E-02				NA		
m,p-Xylene	3/8/2019	31	96	1.1E-05	120	3.2E-02	6.7E-02	4.9E+01	2.7E+04	0.000023%	0.00025%	Yes
	6/10/2019	4.0	70	1.0E-06	94	2.4E-03				0.0000021%		
	9/4/2019	<4.5	86	1.4E-06	86	3.0E-03				0.0000029%		
	12/2/2019	31	117	1.4E-05	89	2.9E-02				0.000028%		
o-Xylene	3/8/2019	13	96	4.7E-06	120	1.4E-02	3.3E-02	4.9E+01	2.7E+04	0.000010%	0.00012%	Yes
	6/10/2019	3.6	70	9.4E-07	94	2.1E-03				0.0000019%		
	9/4/2019	<4.5	86	1.4E-06	86	3.0E-03				0.0000029%		
	12/2/2019	15	117	6.6E-06	89	1.4E-02				0.000013%		

NOTES:

$\mu g/m^3$ - micrograms per cubic meter

< 3.1 - Denotes chemical was not detected at or above the laboratory reporting limit shown.

BAAQMD - Bay Area Air Quality Management District

lb/hr - pounds per hour

lb/yr - pounds per year

NA - BAAQMD Toxic Air Contaminant Trigger Level not established for chemical

SCFM - standard cubic feet per minute

[1] Only detected compounds for which BAAQMD Toxic Air Contaminant Trigger Levels were established are shown in this table.

[2] BAAQMD Toxic Air Contaminant Trigger Levels are established in BAAQMD Table 2-5-1 (December 2016).

[3] Emissions are calculated by multiplying the flow rate measured in the effluent flow measurement port by the corresponding detected concentration in the effluent sample and adjusting for the proper units. In the case of non-detections, SSD emissions per compound are calculated with the reporting limit.

[4] Period is calculated as the number of days between the previous sampling date and the next sampling date.

[5] Emissions in period is calculated as the SSD emissions times the period (days) times 24 (hours per day).

[6] Emissions are cumulative for the calendar year since the last sampling date in 2018 (11/08/2018) and are presented in lb/yr.

[7] Benzyl chloride not reported in 9/04/2019 and 12/02/2019 sampling events.

TABLE 8

AIR SAMPLING RESULTS - 615 NATIONAL AVENUE
MIDDLEFIELD-ELLIS-WHISMAN SUPERFUND STUDY AREA
MOUNTAIN VIEW, CALIFORNIA

					Chemicals of Concern						
Location / Sample ID	Sample Date	Sample Purpose	Sample Duration (hours)	Sample Type	1,1-DCA	1,1-DCE	cis-1,2-DCE	PCE	trans-1,2-DCE	TCE	Vinyl chloride
Air Sampling Results (HVAC On)											
615AMB-1	03/08/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.12	< 0.051
615AMB-2	03/08/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
615AMB-3	03/08/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
615AMB-3	03/08/2019	Indoor	8	Duplicate	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
615AMB-4	03/08/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
615HVAC-1	03/08/2019	Outdoor	8	Primary	< 0.081	< 0.079	< 0.079	0.14	< 0.079	0.15	< 0.051
Air Sampling Results (HVAC Off)											
615AMB-1	03/24/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.16	< 0.051
615AMB-1	03/24/2019	Indoor	8	Duplicate	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.15	< 0.051
615AMB-2	03/24/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.18	< 0.051
615AMB-3	03/24/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.19	< 0.051
615AMB-4	03/24/2019	Indoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	0.19	< 0.051
615OUT-1	03/24/2019	Outdoor	8	Primary	< 0.081	< 0.079	< 0.079	< 0.14	< 0.079	< 0.11	< 0.051
	ROD Commercial Indoor Air Cleanup Level				6	700	210	2	210	5	2

NOTES:

DCA - Dichloroethane
DCE - Dichloroethene
PCE - Tetrachloroethene
TCE - Trichloroethene
All units are micrograms per cubic meter ($\mu g/m^3$).
<0.020 - Denotes chemical was not detected at or above the laboratory reporting limit shown.
Chemicals of Concern and ROD Commercial Indoor Air Cleanup Levels as defined in EPA's "Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California," 16 August 2010.
J - Denotes estimated result.
[1] Potential conduits such as cracks and joints in the floor were sealed in December 2012. Additional areas on the first floor were sealed in December 2015 when the carpet was replace
[2] Sub-slab depressurization system began operation on 12 July 2018.

TABLE 9
SUB-SLAB DEPRESSURIZATION SYSTEM PERFORMANCE MONITORING DATA - 615 NATIONAL AVENUE
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Date	Suction Pits								Pressure Monitoring Points									Equipment Enclosure					Noise Measurements (dBA)
	SP-01		SP-02R		SP-03		SP-04		SS-01	SS-02	SS-03	SS-04	SS-05	SS-08	SS-11	SS-12	SP-02						
	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Vacuum (inH_2O)	Flow Rate (SCFM)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Pressure Differential (inH_2O)	Influent Vacuum (inH_2O)	Effluent Flow Rate (SCFM)	Effluent Temperature (deg F)	Blower B-100 Status	Blower B-110 Status	Ground Floor - Footpath North of Building
7/12/2018[1]	NM	NM	NM	NM	NM	NM	NM	NM	-0.005	0.000	-0.058	-0.245	-0.044	-0.716	-0.093	-0.182	-0.044	-91	NM	NM	Off	On	NM
7/24/2018	-100	144	NM	NM	-97	26	-5.0	16	-0.845	-0.040	-0.032	-0.261	-0.041	-0.435	-0.177	-0.113	-0.026	-96	78	110	Off	On	NM
8/5/2018	-96	41	-0.033	NM	NM	NM	-3.0	25	-0.794	-0.045	-0.033	-0.262	-0.044	-0.423	-0.174	-0.109	-0.024	-96	64	140	Off	On	NM
9/4/2018	-95	19	-0.043	NM	-95	33	-4.0	29	-0.819	-0.048	-0.032	-0.256	-0.039	-0.435	-0.181	-0.120	-0.020	-95	83	165	Off	On	NM
10/23/2018	-99	65	-0.044	NM	-97	27	-3.5	22	-0.881	-0.049	-0.030	-0.252	-0.035	-0.442	-0.167	-0.140	-0.022	-97	64	156	Off	On	64.0
3/24/2019	-95	45	0	NM	-95	20	-3.5	24	-1.175	-0.064	-0.037	-0.283	-0.030	-0.533	-0.174	-0.187	-0.038	-97	61	187	Off	On	63.0
6/10/2019	-98	16	-0.363	NM	-94	27	-2.5	26	-1.054	-0.050	-0.035	-0.250	-0.023	-0.445	-0.156	-0.137	-0.028	-97	36	210	On	Off	50.0
9/4/2019	-97	46	NM	NM	-98	38	-3.0	25	-0.832	-0.040	-0.024	-0.215	-0.021	-0.409	-0.133	-0.098	-0.025	-97	95	201	Off	On	NM
12/2/2019	-100	21	NM	NM	-100	24	-7.0	31	-0.725	-0.041	-0.024	-0.244	-0.020	-0.417	-0.124	-0.113	-0.022	-88	72	113	On	Off	55.0

NOTES:
SCFM - standard cubic feet per minute
dBA - decibels
deg F - degrees Fahrenheit
inH_2O - inches of water column
NM - data not measured
[1] Startup measurements are shown for the final configuration; refer to previous annual reports for additional measurements collected during system startup
Interior pressure monitoring points SS-06, SS-07, SS-09, and SS-10 were abandoned following pilot testing and/or during system construction activities.

TABLE 10

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 615 NATIONAL AVENUE
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Chemical[1]	Sample Date	Analytical Result (µg/m³)	Flow Rate (SCFM)	Comparison with BAAQMD Toxic Air Contaminant Trigger Levels[2]								
				SSD Emissions[3] (lb/hr)	Period[4] (Days)	SSD Emissions in Period[5] (lb)	Cumulative SSD Emissions[6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	% of BAAQMD Acute Trigger Level	% of BAAQMD Chronic Trigger Level	Below BAAQMD Trigger Level
2-Butanone (Methyl Ethyl Ketone)	3/24/2019	5.6	61	1.3E-06	152	4.6E-03	3.0E-02	2.9E+01	NA	0.0000044%	NA	Yes
	6/10/2019	9.8	36	1.3E-06	78	2.4E-03				0.0000045%		
	9/4/2019	22	95	7.8E-06	86	1.6E-02				0.000027%		
	12/2/2019	< 12	72	3.2E-06	89	6.9E-03				0.000011%		
Carbon Disulfide	3/24/2019	< 2.5	61	5.7E-07	152	2.1E-03	3.1E-02	1.4E+01	3.1E+04	0.0000040%	0.000099%	Yes
	6/10/2019	47	36	6.3E-06	78	1.2E-02				0.000045%		
	9/4/2019	< 13	95	4.6E-06	86	9.5E-03				0.000033%		
	12/2/2019	< 13	72	3.5E-06	89	7.5E-03				0.000025%		
Chlorobenzene	3/24/2019	17	61	3.9E-06	152	1.4E-02	2.6E-02	NA	3.9E+04	NA	0.000067%	Yes
	6/10/2019	<1.4	36	1.9E-07	78	3.5E-04				NA		
	9/4/2019	<4.7	95	1.7E-06	164	6.6E-03				NA		
	12/2/2019	<4.7	72	1.3E-06	175	5.3E-03				NA		
Chloroform	3/24/2019	5.4	61	1.2E-06	152	4.5E-03	3.6E-02	3.3E-01	2.0E+01	0.00037%	0.18%	Yes
	6/10/2019	8.9	36	1.2E-06	78	2.2E-03				0.00036%		
	9/4/2019	6.4	95	2.3E-06	164	8.9E-03				0.00069%		
	12/2/2019	18	72	4.9E-06	175	2.0E-02				0.0015%		
Ethylbenzene	3/24/2019	3.3	61	7.5E-07	152	2.7E-03	9.0E-03	NA	3.3E+01	NA	0.027%	Yes
	6/10/2019	< 1.7	36	2.3E-07	78	4.2E-04				NA		
	9/4/2019	< 4.4	95	1.6E-06	86	3.2E-03				NA		
	12/2/2019	4.6	72	1.2E-06	89	2.6E-03				NA		
Tetrachloroethene	3/24/2019	7.9	61	1.8E-06	152	6.5E-03	1.8E-02	4.4E+01	1.4E+01	0.0000041%	0.13%	Yes
	6/10/2019	8.6	36	1.1E-06	78	2.1E-03				0.0000026%		
	9/4/2019	< 6.9	95	2.4E-06	86	5.1E-03				0.0000056%		
	12/2/2019	< 7.0	72	1.9E-06	89	4.0E-03				0.0000043%		
Toluene	3/24/2019	6.0	61	1.4E-06	152	5.0E-03	1.5E-02	8.2E+01	1.2E+04	0.0000017%	0.00012%	Yes
	6/10/2019	3.0	36	4.0E-07	78	7.5E-04				0.00000049%		
	9/4/2019	< 3.8	95	1.3E-06	86	2.8E-03				0.0000016%		
	12/2/2019	11	72	3.0E-06	89	6.3E-03				0.0000036%		
1,1,1-Trichloroethane	3/24/2019	< 1.6	61	3.6E-07	152	1.3E-03	9.0E-03	1.5E+02	3.9E+04	0.00000024%	0.000023%	Yes
	6/10/2019	1.7	36	2.3E-07	78	4.2E-04				0.00000015%		
	9/4/2019	< 5.5	95	2.0E-06	86	4.0E-03				0.0000013%		
	12/2/2019	< 5.6	72	1.5E-06	89	3.2E-03				0.0000010%		
Trichloroethene	3/24/2019	150	61	3.4E-05	152	1.2E-01	2.9E-01	NA	4.1E+01	NA	0.71%	Yes
	6/10/2019	290	36	3.9E-05	78	7.2E-02				NA		
	9/4/2019	6.0	95	2.1E-06	86	4.4E-03				NA		
	12/2/2019	160	72	4.3E-05	89	9.2E-02				NA		
m,p-Xylene	3/24/2019	4.7	61	1.1E-06	152	3.9E-03	2.2E-02	4.9E+01	2.7E+04	0.0000022%	0.000083%	Yes
	6/10/2019	< 3.5	36	4.7E-07	78	8.7E-04				0.0000010%		
	9/4/2019	< 4.4	95	1.6E-06	86	3.2E-03				0.0000032%		
	12/2/2019	25	72	6.7E-06	89	1.4E-02				0.000014%		

TABLE 10

SUB-SLAB DEPRESSURIZATION SYSTEM EFFLUENT AIR SAMPLING RESULTS - 615 NATIONAL AVENUE
MIDDLEFIELD-ELLIS-WHISMAN AREA AND MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

Chemical[1]	Sample Date	Analytical Result (µg/m³)	Flow Rate (SCFM)	Comparison with BAAQMD Toxic Air Contaminant Trigger Levels[2]								
				SSD Emissions[3] (lb/hr)	Period[4] (Days)	SSD Emissions in Period[5] (lb)	Cumulative SSD Emissions[6] (lb/yr)	BAAQMD Acute (1-hr. max.) Trigger Level (lb/hr)	BAAQMD Chronic Trigger Level (lb/yr)	% of BAAQMD Acute Trigger Level	% of BAAQMD Chronic Trigger Level	Below BAAQMD Trigger Level
o-Xylene	3/24/2019	<1.7	61	3.9E-07	152	1.4E-03	1.2E-02	4.9E+01	2.7E+04	0.00000079%	0.000044%	Yes
	6/10/2019	<1.7	36	2.3E-07	78	4.2E-04				0.00000046%		
	9/4/2019	< 4.4	95	1.6E-06	86	3.2E-03				0.0000032%		
	12/2/2019	12	72	3.2E-06	89	6.9E-03				0.0000066%		

NOTES:

µg/m³ - micrograms per cubic meter
SCFM - standard cubic feet per minute
BAAQMD - Bay Area Air Quality Management District
lb/hr - pounds per hour
lb/yr - pounds per year
< 3.1 - Denotes chemical was not detected at or above the laboratory reporting limit shown.
NA - BAAQMD Toxic Air Contaminant Trigger Level not established for chemical.

[1] Only detected compounds for which BAAQMD Toxic Air Contaminant Trigger Levels were established are shown in this table.

[2] BAAQMD Toxic Air Contaminant Trigger Levels are established in BAAQMD Table 2-5-1 (December 2016).

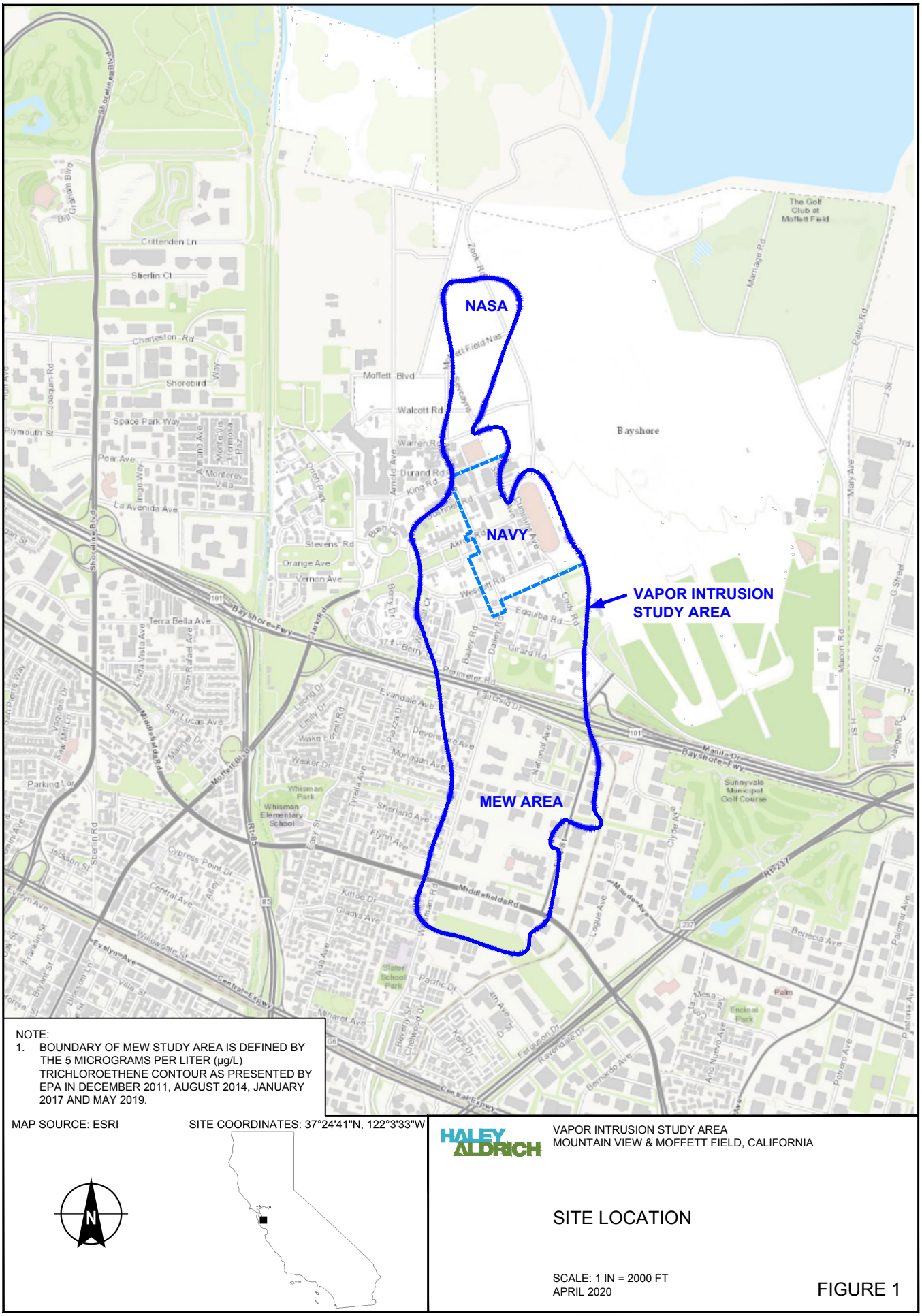
[3] Emissions are calculated by multiplying the flow rate measured in the effluent flow measurement port by the corresponding detected concentration in the effluent sample and adjusting for the proper units. In the case of non-detections, SSD emissions per compound are calculated with the reporting limit.

[4] The system start date is 7/12/2018. Period is calculated as the number of days between the previous sampling date and the next sampling date.

[5] Emissions in period is calculated as the SSD emissions times the period (days) times 24 (hours per day).

[6] Emissions are cumulative for the calendar year since the last sampling date in 2018 (10/23/2018) and are presented in lb/yr.

FIGURES



NOTE:
1. BOUNDARY OF MEW STUDY AREA IS DEFINED BY THE 5 MICROGRAMS PER LITER (µg/L) TRICHLOROETHENE CONTOUR AS PRESENTED BY EPA IN DECEMBER 2011, AUGUST 2014, JANUARY 2017 AND MAY 2019.

MAP SOURCE: ESRI

SITE COORDINATES: 37°24'41"N, 122°3'33"W

HALEY ALDRICH

VAPOR INTRUSION STUDY AREA
MOUNTAIN VIEW & MOFFETT FIELD, CALIFORNIA

SITE LOCATION

SCALE: 1 IN = 2000 FT
APRIL 2020

FIGURE 1

S:\SDG_COMMON\36067_STC_MEW_VIGLOBAL\CAD\2018-03\127775-004_0001_LOCUS.DWG

LEGEND

- SLURRY WALL
- E ELLIS STREET
- M EAST MIDDLEFIELD ROAD
- F FAIRCHILD DRIVE
- W NORTH WHISMAN ROAD
- N NATIONAL AVENUE
- SAMPLES COLLECTED WITH HVAC SYSTEM ON & OFF
- SAMPLES COLLECTED WITH HVAC SYSTEM ON
- SAMPLES COLLECTED WITH HVAC SYSTEM OFF OR HVAC SYSTEM NOT PRESENT

NOTES

1. BOUNDARY OF MEW STUDY AREA IS DEFINED BY THE 5 MICROGRAMS PER LITER (µg/L) TRICHLOROETHENE CONTOUR AS PRESENTED BY EPA IN DECEMBER 2011, AUGUST 2014, JANUARY 2017 AND MAY 2019.
2. BUILDINGS IN RESIDENTIAL AREA ARE NOT SHOWN. EPA HAS SAMPLED MORE THAN 130 RESIDENCES WEST OF WHISMAN ROAD.
3. THIS FIGURE DEPICTS THE STATUS OF ALL COMMERCIAL BUILDINGS WITHIN THE VI STUDY AREA. DETAILS REGARDING THE FORMER PROPERTIES OF OTHER POTENTIALLY RESPONSIBLE PARTIES ARE PROVIDED IN SEPARATE VI ANNUAL REPORTS.

N

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

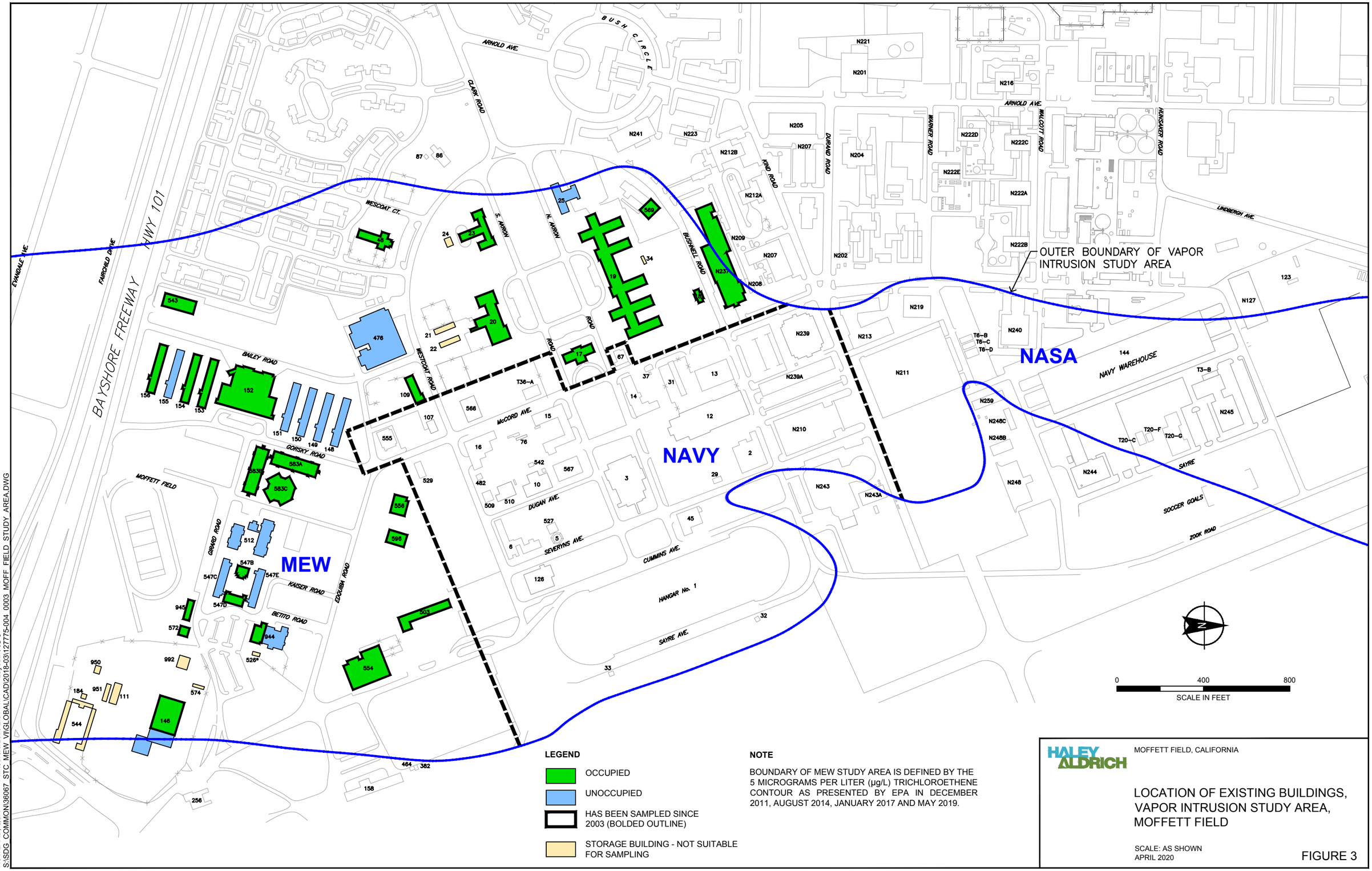
MOUNTAIN VIEW, CALIFORNIA

LOCATION OF EXISTING BUILDINGS, VAPOR INTRUSION STUDY AREA, SOUTH OF U.S. HIGHWAY 101

SCALE: AS SHOWN
APRIL 2020

FIGURE 2

S:\SDG_COMMON\36067_STC_MEW_VI\GLOBAL\CAD\2018_12\127775-004_0002_MTNVIEW_STUDY_AREA.DWG



LEGEND

- OCCUPIED
- UNOCCUPIED
- HAS BEEN SAMPLED SINCE 2003 (BOLDED OUTLINE)
- STORAGE BUILDING - NOT SUITABLE FOR SAMPLING

NOTE

BOUNDARY OF MEW STUDY AREA IS DEFINED BY THE 5 MICROGRAMS PER LITER (µg/L) TRICHLOROETHENE CONTOUR AS PRESENTED BY EPA IN DECEMBER 2011, AUGUST 2014, JANUARY 2017 AND MAY 2019.

HALEY ALDRICH

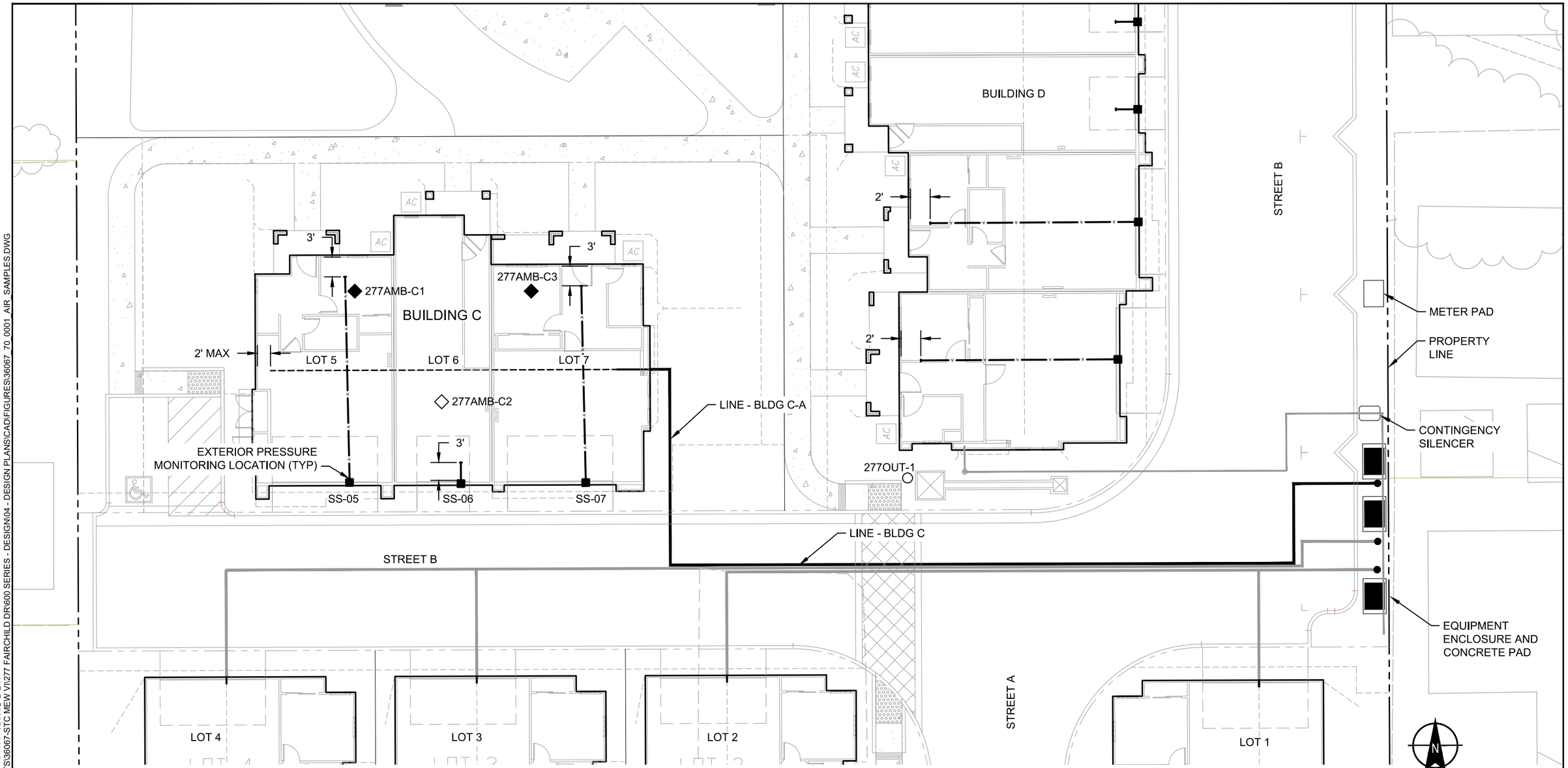
MOFFETT FIELD, CALIFORNIA

LOCATION OF EXISTING BUILDINGS, VAPOR INTRUSION STUDY AREA, MOFFETT FIELD

SCALE: AS SHOWN
APRIL 2020

FIGURE 3

ROWLAND, QUA Printed: 3/6/2019 2:51 PM Layout: FIG 3
S:\SDG COMMON\36067 STC MEW VIG\LOBAL\CAD\2018-03\12775-004 0003 MOFF FIELD STUDY AREA.DWG



LEGEND

- COMPOSITE VAPOR VENT
- 3" SCH80 PVC CONVEYANCE PIPE
- EXTERIOR PRESSURE MONITORING LOCATION
- EQUIPMENT ENCLOSURE AND CONCRETE PAD
- 4" SCH80 CONVEYANCE PIPE
- INDOOR AIR SAMPLING LOCATION - FIRST FLOOR
- INDOOR AIR SAMPLING LOCATION - SECOND FLOOR
- OUTDOOR AIR SAMPLING LOCATION

NOTES

1. BASE MAP PROVIDED BY PROPERTY OWNER.
2. ALL LOCATIONS ARE APPROXIMATE.
3. SUB-SLAB DEPRESSURIZATION SYSTEM BEGAN OPERATION ON 8 AUGUST 2019.

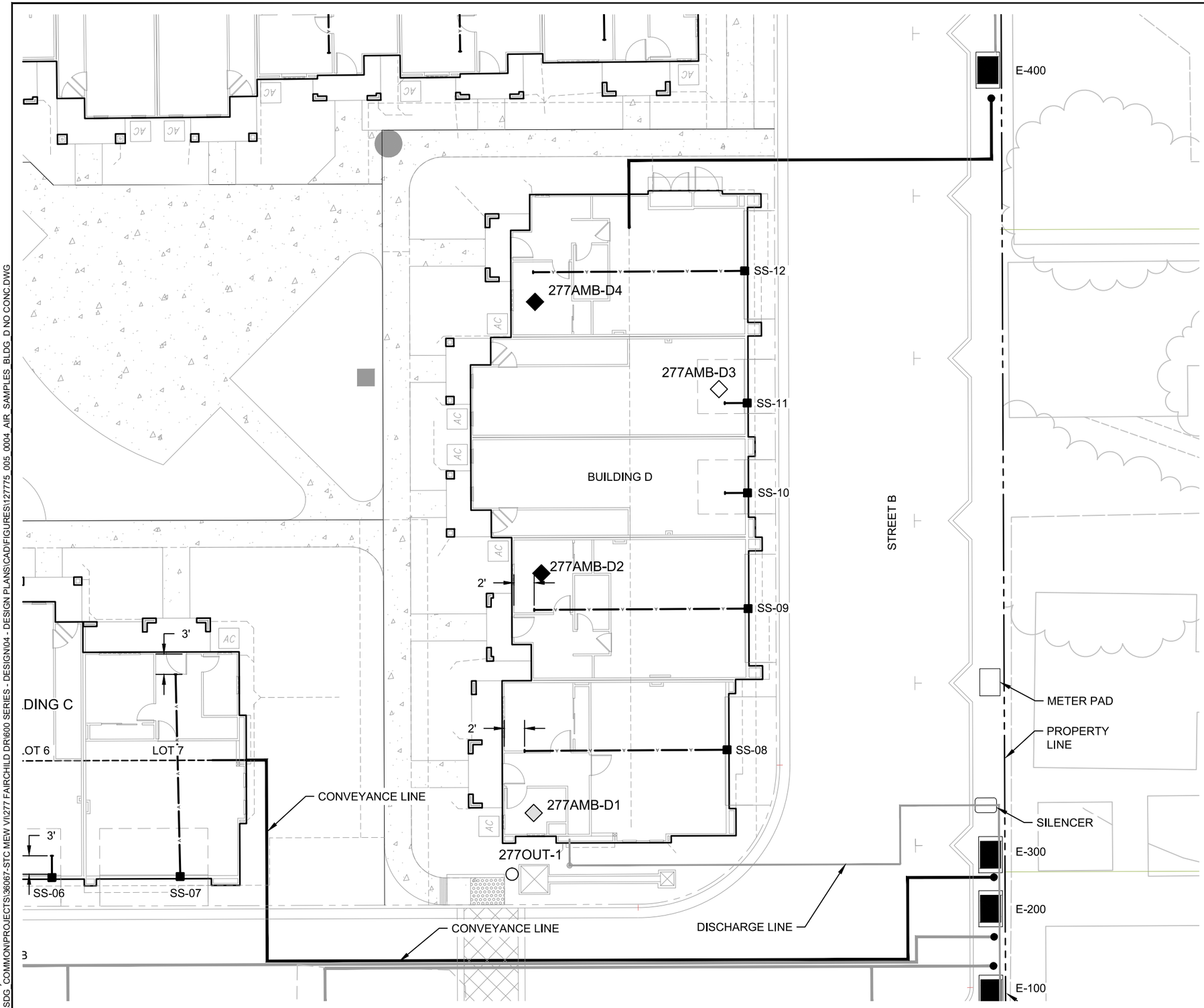
HALEY ALDRICH

277 FAIRCHILD DRIVE
MOUNTAIN VIEW, CALIFORNIA

LOCATION OF AIR SAMPLES - 277 FAIRCHILD DRIVE - BUILDING C

SCALE: AS SHOWN
APRIL 2020

FIGURE 4



LEGEND

- COMPOSITE VAPOR VENT
- 3" SCH80 PVC CONVEYANCE PIPE
- EXTERIOR PRESSURE MONITORING LOCATION
- EQUIPMENT ENCLOSURE AND CONCRETE PAD
- 4" SCH80 CONVEYANCE PIPE
- INDOOR AIR SAMPLING LOCATION - FIRST FLOOR
- INDOOR AIR SAMPLING LOCATION - SECOND FLOOR
- INDOOR AIR SAMPLING LOCATION - THIRD FLOOR
- OUTDOOR AIR SAMPLING LOCATION

NOTES

1. BASE MAP PROVIDED BY PROPERTY OWNER.
2. ALL LOCATIONS ARE APPROXIMATE.
3. SUB-SLAB DEPRESSURIZATION SYSTEM BEGAN OPERATION ON 15 OCTOBER 2019.

N

0 15 30
SCALE IN FEET

HALEY ALDRICH

277 FAIRCHILD DRIVE
MOUNTAIN VIEW, CALIFORNIA

LOCATION OF AIR SAMPLES - 277 FAIRCHILD DRIVE - BUILDING D

SCALE: AS SHOWN
APRIL 2020

FIGURE 5

Saved by: KPOSTOLOWSKI Printed: 3/5/2020 11:44 AM Sheet: FIG C-1
Z:\SDG_COMMON\PROJECTS\36067-STC MEW V\277 FAIRCHILD DR\600 SERIES - DESIGN\04 - DESIGN PLANS\CAD\FIGURES\127775_005_0004_AIR_SAMPLES_BLDG_D NO CONC.DWG

NATIONAL AVENUE

NATIONAL AVENUE

40' APPROX.

37' APPROX.

DECORATIVE PILLARS

4'-0" WIDE x 2'-0" THICK FOOTING

615AMB-2

SP-02R

SS-02

CONFERENCE ROOM

SS-05

SS-04

615AMB-1

OPEN OFFICE

SS-01

7'x7'x2'-6" FOOTINGS

SS-03

8'x8'X2' FOOTING

8'x8'X2' FOOTING

STAIRS

SP-03

C.J.

SP-02

STAIRS

ELEV. ROOM

SP-01

KITCHEN

615AMB-4

KITCHEN

OPEN OFFICE

ELEV.

ELEC. ROOM / CHEM. STORAGE

GRADE BEAM

615AMB-3

SHEAR WALL

SS-08

SP-04

SS-12

SS-11

8'-4" x 5'-9" x 4'-8" ELEVATOR PIT

LOBBY

8'-0" WIDE x 3'-6" THICK FOOTING

5'-0" WIDE x 2'-0" THICK FOOTING

4'-0" WIDE x 2'-0" THICK FOOTING

DECORATIVE PILLARS

615OUT-1

5'-0" WIDE x 2'-0" THICK FOOTING

LEGEND

- SUCTION PIT LOCATION
- SUB-SLAB PRESSURE MONITORING LOCATION
- INDOOR AIR SAMPLING LOCATION
- OUTDOOR AIR SAMPLING LOCATION

NOTES

1. PLAN DERIVED FROM TSH ARCHITECTS, SHEET S1.0 TITLED "FOUNDATION PLAN" + SHEET S5.0 TITLED "FOUNDATION DETAILS" DATED 8/17/2000 AND HABITECH ARCHITECTURE & PLANNING, SHEET A2.1 TITLED "EXISITNG 1ST FLR PLNS, EXISTING 2ND FLR PLNS" DATED 02/04/2008.
2. ALL LOCATIONS ARE APPROXIMATE.

HVAC EQUIPMENT

615HVAC-1

APPROXIMATE LOCATION OF HVAC SYSTEMS AND OUTDOOR SAMPLE

N

0 15 30

SCALE IN FEET

HALEY ALDRICH

615 NATIONAL AVENUE
MOUNTAIN VIEW, CALIFORNIA

LOCATION OF AIR SAMPLES - 615 NATIONAL AVENUE

SCALE: AS SHOWN
APRIL 2020

FIGURE 6

ROWLAND, QUA Printed:3/6/2019 2:42 PM Layout: FIG 3_TCE_DATA
S:\SJC_COMMON\36067_STC_MEW_VICAD\127775-003\615 NATIONAL AVE\2018_10\127775-004_0002.DWG

APPENDIX A

Inspection Reports

HALEY ALDRICH

PASSIVE SUB-SLAB VENTILATION SYSTEM MONITORING FORM

331 Fairchild Drive

Inspection By: ROGER COX
Date: 9/5/19
Project No: 127775-004

Operation and Performance Item	Yes/No	Comments
Visual inspection of vent risers (visible portions outside building)	✓	
Are vent risers in good condition (seals are intact, no cracking)?	YES	
Are sampling ports sealed?	YES	
Take photos of visible portions sampling ports and discharge points	- ✓	
Visual inspection of exhaust points	✓	
Are wind turbines in good condition?	YES	
Are wind turbines free of debris and moving freely?	1/4	RC ~~LAST~~ LOW WIND SPEED WHILE ON Roof
Have any air intake been installed nearby?	NO	
Take photos of exhaust points	- ✓	
Visual inspection of conduits	✓	
Are conduits in the electrical rooms sealed?	YES	
Are conduits in the IDF (MPOE) room sealed?	YES	
Are conduits in fire riser room sealed?	YES	
Take photos of conduits	- ✓	
Visual inspection of the concrete slab to identify potential leaks	✓	
Are there deep (non-surficial) cracks in the exposed concrete slab? (Check the electrical rooms, mechanical room, IDF (MPOE) room, and fire riser room)	NO	
Take photos of cracks	- ✓	
Interview of property representative	✓	
Have there been any renovations or remodeling since the last inspection?	NO	
Are any renovations or remodeling planned?	NO	
Have SSV system maintenance activities occurred since the last inspection?	NO	
Is contact information current?	YES	
Are there any renovations or changes of use in the affected area and/or surrounding area of the building that may affect the effectiveness of the SSV system?	NO	

Additional Comments:

HALEY ALDRICH

PASSIVE SUB-SLAB VENTILATION SYSTEM INSPECTION REPORT

340 East Middlefield Road, Mountain View, California

Inspection By: D. RATTANASITH / E. ITTICHENS
Date: 02/08/19 START 1000 END 1033
Project No: 127775-005 SID 3

Operation and Performance Item	Yes/No	Comments
Visual inspection of vent risers (visible portions inside building and on roof)		
Are vent risers in good condition (seals are intact, no cracking)?	—	DID NOT OBSERVE
Are hazard communication labels present on piping?	YES	→ ROOF
Are sampling ports sealed? – CHECK BRASS PLATES-EXTERIOR	—	DID NOT OBSERVE
Take photos of visible portions of vent risers	–	
Visual inspection of conduits		
Are conduits in the electrical room sealed?	YES	– SOME SURFICIAL CRACKS OBSERVED
Are conduits in the IDF room sealed?	YES	
Are conduits in closets next to north and south entrances sealed?	YES	Y
Take photos of conduits	–	✓
Visual inspection of the concrete slab and SSV system to identify potential leaks		
Are there cracks in the exposed concrete slab? (Check the electrical room, mechanical room, IDF room, closets near north and south entrances) ALL UTILITY ROOMS	YES	SURFICIAL CRACKS
Take photos of cracks	–	✓
Visual inspection of exhaust points (ROOF)		
Are wind turbines in good condition?	YES	– LABELS ✓ TURBINES SPIN
Have any air intake been installed nearby?		
Take photos of exhaust points	–	1 WHIRLYBIRD LOOKS SIDED, BUT SPINS FREELY.
Interview of property representative		
Have there been any renovations or remodeling since the last inspection?	NO	
Are any renovations or remodeling planned?	NO	→ PER PROPERTY OWNER
Have SSV system maintenance activities occurred since the last inspection?	→	NO
Is contact information current?	→	YES
Are there any renovations or changes of use in the affected area and/or surrounding area of the building that may affect the effectiveness of the SSV system?	→	NO

Additional Comments:

HALEY ALDRICH

ACTIVE CRAWLSPACE/BASEMENT VENTILATION SYSTEM INSPECTION REPORT

MEW - Building 20
Moffett Field, California

Inspection By: ROGER COX
Date: 9/5/19
Time: 13:00

Project No: 127775-005 SID 3

System Operational Status	Comments
Indicator light status lights (power to fan) (solid/flashing/off)	N/A
Electrical meter reading	N/A
Fans audible? 79.8 dB-SW FAN 81.3 dB-NE FAN	YES, BOTH
Flowrate at fan 1 and iris valve % open	N/A
Flowrate at fan 2 and iris valve % open	N/A
Alarms on? (if yes, provide more details below)	N/A
Operation and Performance	
Visual inspection of ducting, vents, seals, and structure being ventilated	OK
Visual inspection of the control box, meter, and indicator lights	N/A
Date and time correct?	N/A
Have system maintenance activities that have occurred since the last monitoring? (if yes, provide more details below)	NO MAJOR WORK

Notes:
* See manufacturer instruction manuals for operation and maintenance information or specific operating instructions per Site.

Sample Collection (Sample ID/Date/Time):

N/A

Additional Comments:

NE FAN LOUDER, STILL BELOW 85dB

HALEY ALDRICH

VENTILATION SYSTEM INSPECTION REPORT

Residence 4
350 N. Whisman Road
Mountain View, California

Inspection By: D. RATTANASITH / E. HITCHENS
Date: 02/08/19
Time: 1200/1230

Project No: 127775-005 SID 3

System Operational Status	Yes/No	Comments
Influent blower operating? (GO TO VENTS)	YES	
Effluent blower operating? (GO TO VENTS)	YES	
White lamp status (solid/flashing/off)	FLASHING →	SOLID AFTER RESET
Middle green lamp status (solid/flashing/off)	SOLID	
Lower green lamp status (solid/flashing/off)	SOLID	
Alarms on? (if yes, provide more details below)	YES	POWER FAILURE (ONLY 1 FAULT DISPLAYED)
Operation and Performance		
Visual inspection of the blowers	✓	
Visual inspection of the PLC and display	✓	GOOD
Date and time in PLC are correct	✓	YES - SEE PHOTO
Have system maintenance activities that have occurred since the last monitoring? (if yes, provide more details below)		

Notes:
* See Residence 4 Ventilation System Operating Instructions for operation and maintenance information

Additional Comments: 421 CFM (8" DIAMETER PIPE)

TOOK PHOTO OF ELECTRICAL READER FOR PG&E REIMBURSEMENT

M1 PLC INFO
2 SYSTEM CFG
3 MONITOR
4 CALENDAR
5 PASSWORD
6 ERROR HISTORY

APPENDIX B

Laboratory Analytical Reports

(redacted based on file size – included with CD copy only)